

ANNUAL REPORT

OF THE

DEPARTMENT OF AGRICULTURE

OF THE

PROVINCE of ALBERTA

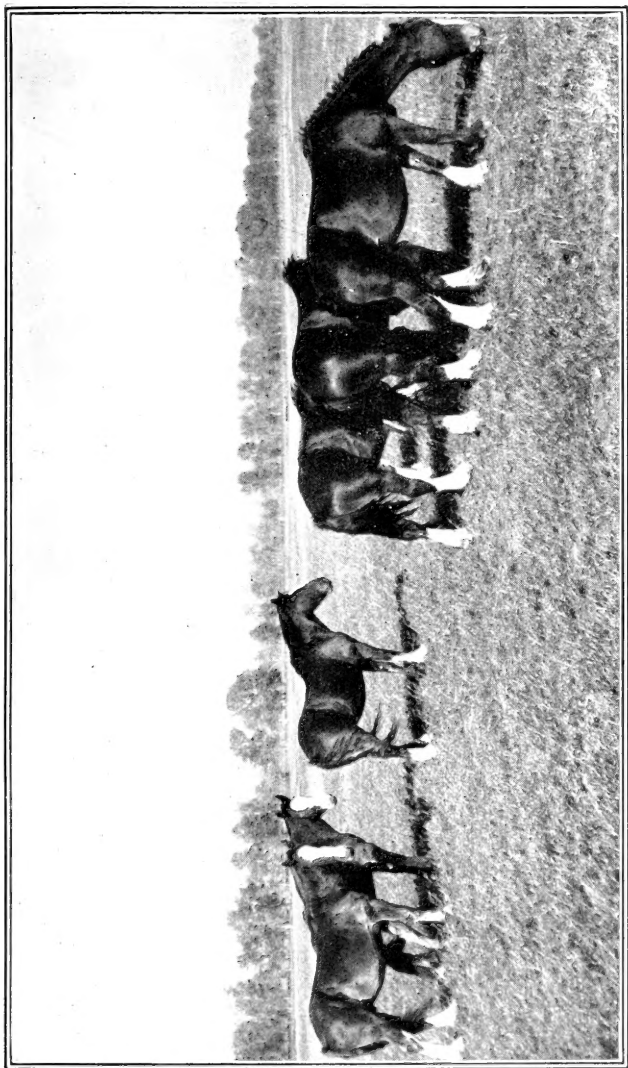
FOR THE YEAR
1922

PRINTED BY ORDER OF THE LEGISLATIVE ASSEMBLY



EDMONTON

PRINTED BY J. W. JEFFERY, KING'S PRINTER
1923



CLYDESDALES ON AN ALBERTA FARM



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DEPARTMENT OF AGRICULTURE, EDMONTON.

TO HIS HONOUR

ROBERT GEORGE BRETT,

Lieutenant Governor of the Province of Alberta.

SIR,—

I have the honour to submit herewith the Report of the Department of Agriculture for the year 1922.

I have the honour to be, Sir,

Your obedient servant.

GEORGE HOADLEY,

Minister of Agriculture.

C O N T E N T S

- Report of the Deputy Minister.
- Report of the Livestock Commissioner and District Agriculturists.
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- Report of the Dairy Commissioner.
- Report of the Provincial Veterinarian.
- Report of the Field Crops Commissioner.
- Report of the Poultry Commissioner.
- Report of the Director of Demonstration Farms.
- Report of the Superintendent of Fairs and Institutes.
- Report of the Chief Game and Fire Guardian.
- Report of the Director of Women's Extension Service.
- Report of the Publicity Commissioner and Statistician.
- Report of the College of Agriculture.
- Reports of the Schools of Agriculture.

DEPARTMENT OF AGRICULTURE

Heads of Branches

H. A. Craig, Deputy Minister and Superintendent of Agricultural Schools.

Z. W. McIlmoyle, Assistant Deputy Minister.

S. G. Carlyle, Live Stock Commissioner and Brand Recorder.

C. P. Marker, Dairy Commissioner.

P. R. Talbot, V.S., Provincial Veterinarian.

W. J. Stephen, Field Crops Commissioner.

J. H. Hare, Superintendent of Poultry Branch.

D. Douglas, Director of Demonstration Farms.

Alex. Galbraith, Superintendent of Fairs and Institutes.

B. Lawton, Chief Game and Fire Guardian.

Miss Jessie McMillan, Director of Women's Extension Service.

Colin G. Groff, Publicity Commissioner and Editor of Publications.

Report of The Deputy Minister

HON. GEORGE HOADLEY,
Minister of Agriculture,
Edmonton.

SIR,—

I have the honour to submit herewith the Seventeenth Annual Report of the Department of Agriculture.

Agricultural conditions in Alberta have not improved during the past year. Lack of moisture has been responsible for a short crop over most of the province. During the period of high prices farmers were induced to break new acreage and to put in a large crop and in many cases this acreage proved more than the farmer was able properly to handle. During the period of falling prices farmers have been anxious to reduce their acreage but have found this a difficult matter to accomplish. There is a very marked tendency at the present time toward more intensive cultivation and it is evident that there is more care taken generally in the handling of grain crops. A large acreage per farm under cultivation has resulted in the spread of noxious weeds. During the past year, however, the Department has noticed a distinct improvement in the methods generally employed for the control of weeds. The prosperity of the future is bound up to some considerable extent with more careful cultivation of smaller farm units.

The phenomenal success of Alberta at the International Hay and Grain Show held in Chicago has demonstrated once more that our province is essentially adapted for the production of a high quality of all kinds of grain and grass seeds. The various exhibits at this show are drawn from all over North America. In this keen competition it was a great satisfaction to have the championship in oats come to this province with the exhibit of W. J. Biglands of Lacombe. First prizes were also won in barley, peas and rye. Out of fifty-one exhibits sent from this province, thirty-seven prizes were won including four Firsts, three Seconds, and four Thirds. The complete list of the winnings will be found in the report of the Field Crops Commissioner.

During the past few years a number of our farmers have started in the production of registered seed grain. Many of these men found difficulty in properly cleaning their seed with the ordinary fanning mill. Difficulty was also experienced in disposing of this seed when grown in large quantities. With a view to developing the business and if possible to establishing a reputation for Alberta-grown seed, the Department commenced this year to operate a plant for re-cleaning registered seed grain. About 20,000 bushels of wheat and oats have been received at this plant. After the grain is carefully cleaned and graded it will be advertised and offered for sale; it is expected that a large business will develop in

the production and sale of this seed. It should be the concern of everyone interested to market nothing but the very highest quality and thus establish a reputation which will make it easier in years to come to find a market.

Fodder and silage crops are receiving increased attention of late. Without doubt the corn crop is going to be an important factor in the solving of winter feed for a portion of the south country. Good yields of corn have been secured on many farms, even in the dry seasons which we have lately experienced. Sunflowers are being grown extensively in the southern part of the Province particularly and are very much favored as a silage crop. Through the centre and north where green oats can be grown in great abundance in an ordinary year, this crop will be used extensively for silage purposes. It is a little early yet to determine with any degree of accuracy the extent to which corn and sunflowers will be used in the northern half of the Province. Both corn and sunflowers have been grown in this area with varying degrees of success, depending to some extent upon the season and also upon the nature of the soil on which they happen to be planted.

It is evident that sweet clover will be an important pasture and fodder crop in the near future in many sections of the province, both north and south. This crop has given very satisfactory results.

The number of silos has increased very greatly during the past year. The Department estimates that there are at least 1,000 trench silos in use in the province and in every case farmers are pleased with the results. Upright wooden silos have also been erected on many farms. The cost of these, however, has been a deterrent in their erection.

The general feed situation during the present winter gives no cause for alarm. In some years previously it has been necessary to import large quantities of feed; such will not be the case this year, except that feed grain will be somewhat short. Already a considerable quantity of grain is being shipped in from other provinces.

We have come to realize of late years that the province has been overstocked with cattle, sheep and horses. In cattle particularly, there has been heavy liquidation, 90,000 head having gone through the Edmonton Stockyards and 113,000 through the Calgary Stockyards in 1922. Farmers have come to the conclusion that it is wiser to reduce their herds to the number which they can be sure of feeding well through the winter. Many of the cattle which have been marketed were thin and of poor quality. The prices received were exceedingly low and the demand for this grade of cattle was very limited. Well finished beef, on the other hand, brought a fair price throughout most of the season and the prospect for next spring seems to be encouraging.

There has been a very marked development in the dairy business during the season. The steady, sure income from this source

has induced numbers of people to engage in the business. In spite of the fact that pastures were short and the season dry, the output of butter has been substantially increased. It is essential for successful dairying in Alberta that pasture crops be grown for use in the spring and fall, otherwise the period of stable feeding is too prolonged. Fall rye and rape have given good results on the farms operated by the Department.

The cream-grading service established this year by the Department has had a very marked effect on the quality of the butter produced. Special grade butter being handled by the Department's marketing service had dropped to about 7% in 1921 while the season's output for 1922 has resulted in an increase of "specials" up to about 27% and in a very large measure, we are of the opinion that this may be directly traced to the new system of cream-grading. Notwithstanding the fact that the price of butter has been on the average about $11\frac{1}{2}$ c lower than in the previous year, the price of cream has been about 2c per pound higher. The Dairy Branch estimates that the revenue to farmers has been increased at least \$250,000 as a result of this service being in operation.

The Poultry and Egg Marketing Service operated by the Department has increased its business very greatly. A total of 26 cars of eggs has been handled and about 500,000 pounds of poultry including chickens, turkeys, ducks and geese. Some of the high grade eggs and poultry have been shipped to the Old Country. It is the wish of the Department to establish a connection on the British market for our high quality produce. Only the best grades have been shipped and satisfactory prices have been realized. The quality of the eggs and poultry being sent by this service has substantially improved during the past year.

Since the American market has been restricted on account of the tariff imposed, this province has been obliged to look to the British market as an outlet for most of its farm commodities. The competition on this market is exceptionally keen. More than ever before we must now offer only a finished article of high class quality. All our goods must be carefully graded and only such commodities as will help build a reputation for Canadian goods should be permitted to be exported.

The British embargo against Canadian cattle has been lifted. This will have the effect of increasing the numbers of export cattle.

The new hog grading system put into operation during the year with the premium which is offered for bacon hogs, has already had a marked effect on the type of hog being offered for sale. Hog prices have been comparatively high and the numbers marketed very much in excess of that in any recent year.

The past season has not been a very prosperous one for the farmers of Alberta. Adjustments in the methods of operation are taking place which will have the effect of improving conditions.

Acknowledgment is made of the financial assistance received through the Dominion Agricultural Instruction Act. This grant

makes a very substantial addition to the provincial funds. The various activities carried on by means of this grant are outlined in the reports which follow. The money received by this means makes it possible for the Department to undertake a great deal of additional work.

The heads of the various Branches of the Department have covered more in detail a number of the subjects discussed in this report.

Respectfully submitted,

H. A. CRAIG,
Deputy Minister.

Report of the Livestock Commissioner and District Agriculturists

H. A. CRAIG,

Deputy Minister of Agriculture.

SIR,—

I beg to submit herewith the report of the Livestock Branch for the year 1922.

The general livestock situation in the province is not in as satisfactory a condition as could be wished for. This is especially true of horses and beef cattle. The prices of these two classes of stock have perhaps never been lower in the history of the province.

Alberta up to the present has been a stock-producing province. The farmers and ranchers have evidently found it more profitable to grow stockers and feeders and place them upon the market as such, rather than feed and finish their cattle. Our natural market has been the United States and during the war when our cattle had access to that market free of duty, practically all our stockers and feeders were shipped to the corn belt to be finished by the United States farmers. This proved a profitable business for them as well as for us, but in 1921 the United States Government saw fit to impose a duty on our stock entering their country. This, with the general downward prices of all farm produce, caused a slump in the prices of cattle. In September of this year the United States Government decided to raise the duty still higher, the result being an almost staggering blow to the cattle industry of this country. In addition to the low prices, a very short crop was harvested in the central and northern parts of the province. After the experience of three years ago the majority of farmers decided to dispose of their cattle rather than purchase feed, with the result that large numbers of cattle were rushed to the market and sold at exceedingly low figures, especially calves, yearlings and female stuff. The price of good two and three-year-old steers remained fairly good, but there were far too few of these.

Below is the number of cattle received in the Calgary and Edmonton Stockyards during the years 1921 and 1922:

		Cattle	Calves
Calgary	1921.....	80,200	13,215
	1922.....	89,261	16,087
Edmonton	1921.....	41,159	5,697
	1922.....	90,377	13,452

The provincial department of agriculture, in co-operation with the Dominion bureau of statistics, estimates that there are approximately 219,160 cattle (including all classes) less in the province

this year than 1921, with an approximate decrease in valuation of \$228,594.

FUTURE IS BRIGHTER

The future of the cattle industry for 1923 is considerably brighter. To compensate somewhat for the loss of the American market, the long controversy over the British embargo has now been settled, and if freight and ocean rates are not prohibitive, large shipments are expected to go through the coming season, but the demand will only be for well bred cattle in good condition. There is no demand in Great Britain for poorly bred or thin cattle. If the stockmen of Alberta are to capture their share of this trade only the best bred bulls should be used, and the young stock well fed and well cared for. The feeding and finishing of steers should form an important industry in Alberta. When well bred steers of good type have been properly fed by private farmers or by public institutions, in nearly every case it has proved a profitable business.

PURE-BRED CATTLE

The price of pure bred female stock has been very low throughout the year. There was not as strong a demand for bulls as in recent years, and the prices were somewhat lower. Below is a summary of some of the bull sales held in the Province:

CALGARY SPRING BULL SALE

Breed	No. Sold	Average Price Paid
Shorthorn.....	170	\$135.00
Hereford.....	123	105 20
Aberdeen-Angus.....	40	82 02
Other Breeds.....	4	111 25

CALGARY MAY CATTLE SALE

Shorthorn.....	29	\$110 00
Hereford.....	32	105 62
Aberdeen-Angus.....	4	78 75

CALGARY WINTER FAIR SALE

Holsteins.....	7	\$204 28
Hereford.....	10	73 50
Shorthorn.....	64	40.00
Aberdeen-Angus.....	12	50 40

EDMONTON BULL SALE

Aberdeen-Angus.....	14	\$110 71
Hereford.....	8	118 75
Shorthorn.....	106	138 44
Red Polled.....	1	150 00
Holstein-Friesian.....	4	83 75

LACOMBE CATTLE SALE

Shorthorn.....	82	\$104 25
Hereford.....	23	76 00
Aberdeen-Angus.....	14	82 50
Red Polled.....	3	111 50
Shorthorn (females).....	17	109 00

DAIRY CATTLE

There has been a strong demand for dairy cows in every part of the province. Butter has been a satisfactory price, and the majority of farmers realize that it pays to keep a few milk cows which bring in some ready money every week and also furnish skim milk for young pigs which is so essential to their growth.

There seems to be a disposition on the part of some who are just starting in the dairy business to buy well bred, expensive cows; a safer plan would be to pick the best cows available in the district and grade them up, using a pure bred bull.

HORSES

The horse market has been decidedly dull. There has been a fair demand for good, big, sound, well-broken horses, but for the ordinary farm chunk there is practically no market. Both in Canada and the United States the prospect seems bright in the near future for good, big drafters. There has been a falling off for the past few years in the number of colts raised, and in some districts there are not enough young horses coming on to take the place of the older horses.

A number of carloads have been shipped east recently, principally to the city of Montreal, and sold at remunerative prices. These horses were young, big and well-broken.

There is also a fair demand for good quality upstanding delivery horses weighing around 1,400 to 1,500 lbs. in the cities of Montreal and Toronto. While prices are not high and may not be very high in the near future, the tide has turned. There is a demand for horses, and that demand will keep on increasing, and I think it would be a mistake for the farmers of Alberta at the present time to discontinue the breeding of horses.

The Dominion Government is giving generous assistance to farmers to form clubs under its stallion policy, and I would strongly urge that the farmers of Alberta take advantage of this assistance. If this is not done our best breeding stallions will be clubbed in the provinces of Manitoba and Saskatchewan, as these provinces have taken advantage of this assistance to a much greater extent than the province of Alberta. It takes practically five years to grow a horse and put him on the market, and everything points to a scarcity of good horses at that time.

SHEEP

The sheep industry is on a firm basis in the province. The price of mutton, especially lamb, has been satisfactory, and there has been a fair demand for grade breeding ewes to establish new flocks. The demand for pure bred females breeding stock has been slow and the prices realized rather disappointing.

The feeding of lambs for market is becoming a popular business, especially in the Calgary district. Around 40,000 head were fed in the season of 1921 and 1922, and practically the same num-

ber is being fed this season. They are bought on the range and in the stockyards, and fed principally on screenings. It would pay the farmers to look into this business, especially those who have surplus feed, and not only finish their own lambs, but it would no doubt prove a profitable business to purchase a number from the ranchers. The farmers living in irrigated districts, who are raising alfalfa, could dispose of it profitably in this way.

No sale of pure bred sheep has been held in Edmonton for the past two years. The breeders, having sheep for sale, have listed them with the Secretary, Mr. J. W. Stark, who has advertised them and acted somewhat as a selling agent. The result of this system has worked out satisfactorily.

The Alberta Provincial Sheep Breeders' Association decided to have the rams offered by their members for sale graded, and asked the Dominion Livestock Commissioner to supply a grader. This request was complied with, and Mr. D. McEwen of London, Ont., acted as grader with entire satisfaction. Rams of good type and fleece that were considered good enough to use on a pure bred flock, were marked with a tattoo of three XXX in the ear. Those considered good enough for grade flocks, which might be a little off type, were marked with two XX, and those considered not good enough for breeding, were marked with one X and sent to the butcher. This system will protect the purchaser who buys by mail.

A pure bred sheep sale was held in Calgary in conjunction with the Fat Stock Show, and, considering the prices of other classes of breeding stock, was considered a success. Good outstanding individuals realized a good price. The prices of females were somewhat disappointing. Below is a summary of this sale:

Breed	No. Sold	Average Price Paid
Oxford	42	\$20.93
Shropshires	50	17.62
Suffolks	52	12.55
Grades	10	6.75

HOGS

Hogs have been the most profitable of any class of farm animal the past year. There has been a keen demand and the prices were higher than anticipated.

There has been a large increase in production as is shown by comparing the numbers received in the Edmonton and Calgary yards during 1921 with 1922:

Calgary	1921.....	48,528
	1922.....	81,523
Edmonton	1921.....	35,946
	1922.....	73,036

The grading system, which was discussed for more than a year, came into effect the 1st of November. The number of hogs

grading as "selects," for which a premium is paid, was in Calgary 3.64 and in Edmonton 2.49%. This low percentage is due chiefly to two reasons: the small number of bacon type hogs in the province and the system of feeding. In Denmark, where the finest bacon is produced, large quantities of skim milk are fed. In Ontario, where a large per cent of hogs grade "select" skim milk is also largely used, but in Alberta, where dairying is practised to a limited extent over a large area, the principal feed is a straight grain ration, so that when the hogs are placed on the market, though perhaps within the minimum and maximum weights, are overdone, being heavy in jaw and shoulder, and the fat along the back too thick. If we are to produce the select bacon hog in Alberta we must pay attention to both the breeding and feeding. Where plenty of skim milk is not available, pasture or green feed should be used, such as rye, oats, wheat, sweet clover, rape and alfalfa, with enough grain to keep them in a good, thrifty, growing condition.

EDUCATIONAL WORK

During the winter of 1922 a special farming train was run over part of the C.P.R. system in the province. The Canadian Pacific Railway generously supplied the cars and the transportation of the train free of charge and officials of the Dominion and Provincial Departments of Agriculture. The University furnished the speakers, assisted by Mr. Guy Herbert, President of the Alberta Swine Breeders' Association; also Miss Emerson of the Health Department gave valuable assistance during part of the trip giving illustrated lectures to women and children.

On the train were carried two dairy cows, two dairy Shorthorn cows, three lambs of the approved mutton type, five pure bred breeds of swine, and two "select" bacon hogs, one export Wiltshire side and one thick smooth side, samples of ensilage, etc.

Lectures were given at each point visited on dairying, hog raising, rearing and feeding of sheep, and the feeding and judging of dairy cattle. The trench silo and bacon hog were especially featured.

Twenty-seven places, one day in each place, were visited, viz.: Acme, Irricana, Okotoks, High River, Nanton, Vulcan, Blackie, Alix, Stettler, Castor, Coronation, Camrose, Strome, Sedgewick, Hardisty, Czar, Provost, Busby, Westlock, High Prairie, Falher, Spirit River, Sexsmith, Grande Prairie, Peace River and Berwyn, with a total attendance of over 13,000 people. Thanks of this branch are due the Swift Canadian Company in loaning us bacon hogs, lambs, carcasses and Wiltshire sides.

A three-day short course school was also held in Red Deer which was well attended and much appreciated.

In the fall of 1922 a series of meetings was held on the Goose Lake line and the Manyberries branch, addressed by Mr. M. L. Freng and Mr. James Murray, District Agriculturists in Southern Alberta. Fodder crops, cultivation of the soil and livestock were

the subjects discussed. Good interest was shown at these meetings and for the most part they were well attended, the farmers appreciating any help given in the solution of their problems.

DISTRICT AGRICULTURISTS

Three district agriculturists have been appointed by the Department. H. W. Scott was appointed in 1920 in the Sedgewick district, M. L. Freng in 1921, in the Lethbridge district, and James Murray, 1922, in the Medicine Hat district.

The duties of these men are to visit the farmers in their district, coming into personal contact with them, finding out their problems and helping to solve them. They also hold meetings in local centres, giving addresses and discussing subjects of interest. They assist in boys' and girls' work, organizing Pig and Calf Clubs, and in some districts spend considerable time in School Fair Work.

The Department believes that more assistance can be given to the farmers by appointing trained, experienced men to meet them on their own farms than by any other system. More men are urgently needed to work in the newly settled and foreign districts, to help these people get started right, and to advise and encourage them. A little interest shown in their welfare, a little help and advice in times of discouragement during the first few years will do much to hearten and cheer them, and make them contented and prosperous citizens. Below is a detailed report of the District Agriculturists.

Respectfully submitted,

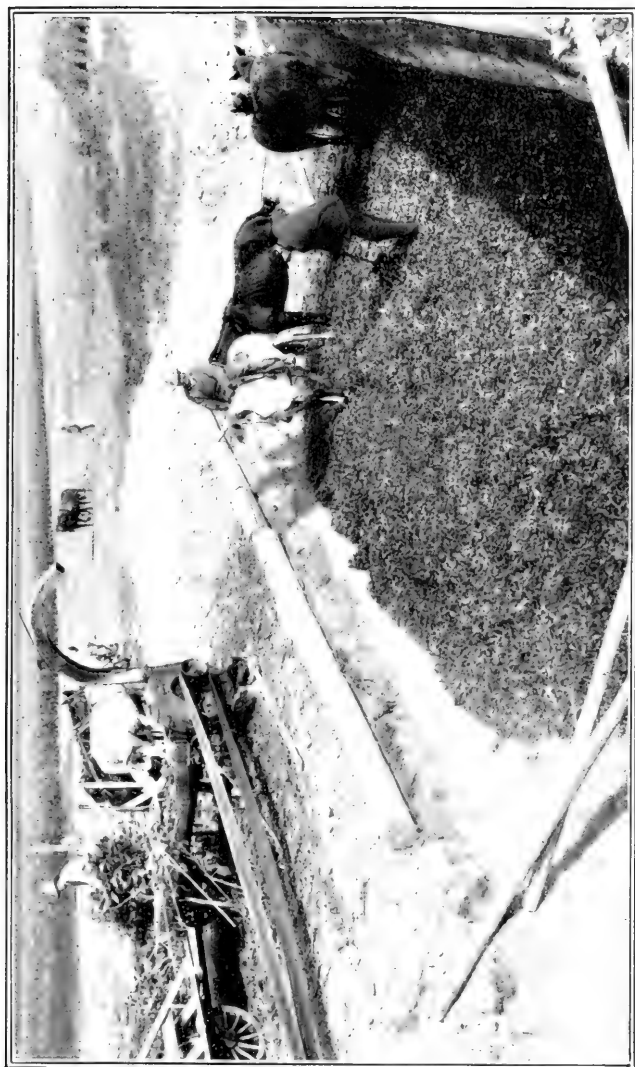
S. G. CARLYLE,

Livestock Commissioner.

REPORT OF MR. JAMES MURRAY, DISTRICT AGRICULTURIST, MEDICINE HAT

In entering upon my work as District Agriculturist for south-eastern Alberta, the logical procedure seemed to be to get thoroughly acquainted with my constituency. This has not been exactly defined, but roughly speaking embraces a territory 180 miles from north to south and 70 miles from east to west, or about 12,000 square miles.

While there are considerable areas in this territory in grazing leases, forest reserves and in reserves for irrigation companies, settlement is scattered over the greater part of it, so that one summer is not sufficiently long to enable one to get more than an incomplete knowledge of actual conditions in all parts. The whole district is included in what is known as the "dry area" where the average precipitation ranges in different parts from eleven to fifteen inches. Some good crops have been harvested every year but the general average for the past six years has been very low.



FILLING A TRENCH SILO

Many of this class of Silo were built in Alberta during 1922 and found successful

Most of the territory has been settled less than fifteen years, and the majority of those who are now farming are those who originally homesteaded. Those who came in and farmed to get a homestead have largely disappeared, and many half sections are in the hands of mortgage companies or abandoned altogether. Many others who took up land with the intention of living on it have found the struggle for existence too strenuous and have given up. In some districts there has been very little land abandoned—none in fact that has soil suited for crop production, but in others few settlers remain. Generally speaking the districts with the heaviest soil are those most completely depopulated, but there are other stretches of very light land prone to drift readily where there has been wholesale abandonment. Coupled with the handicap of poor soil in some districts has been an unprecedented period—as far as records go—of light rainfall, the usual hot winds, and more than the ordinary trouble with insect pests, particularly cutworms.

The class of farming followed has been that common to all new districts in the west—straight grain growing. It is the logical system under pioneer conditions. Too frequently it has been followed slavishly with no regard to the side lines which bring in comparatively little money compared to a big wheat crop, but which add so greatly to the safety of farming. The phenomenal harvests of 1915 and 1916 had the opposite effect to that which the country needed. Many farms were extended, equipment doubled and too often careful, tried methods were slighted or brushed aside. The trying seasons which followed have not produced much revenue to liquidate the obligations then incurred.

In a district as extensive as that under consideration with its great variety of soils, varying rainfall and with several thousand farmers, from the most highly efficient to those with little skill in operation and management, few general statements can be made that apply everywhere.

In practically every district are those who have done fairly well even during the past six years and who are making steady if slow progress, and adjoining them are others who are becoming more involved every year. There are many who have been searching for ways and means of overcoming the climatic handicaps under which they labor. They have made notable progress in working out methods of soil cultivation suited to their climatic and soil conditions, in growing grass and other forage crops and in systems of farm management adaptable to dry regions.

The experience of such men is invaluable to their own and other communities similarly situated. They are not only willing to pass on their experience for the benefit of others but are alert to grasp new ideas of practical value to them.

During the summer when opportunity offered I attended and addressed farmers' meetings in the district. Over twenty were held, most of them under the auspices of U.F.A. locals. The object was largely to get acquainted with the people in the country and

to get first hand knowledge of their conditions and their problems and to pass on the experience of others working under similar conditions.

In November and December a series of fifteen meetings was held on the Manyberries line and between Hanna and Alsask on the Canadian National. These were addressed by Mr. M. L. Freng and myself. The objects discussed were those that the summer's experience had indicated as being of prime importance, such as soil cultivation with special reference to methods of summer-fallowing, the growing of fodder crops, the construction of trench and other forms of silos, and other related subjects. In spite of very severe weather the meetings were well attended, and in most cases excellent discussions took place.

At present there appears to be greater need for work along the lines of soil cultivation methods and the growing of fodder crops, and I am arranging to place special emphasis on these phases of the work during the coming year.

During the summer I prepared a circular on "The Summer-fallow in Southern Alberta" and one on "Winter Rye." These were printed for general distribution in this territory. I also judged the Soil Products at the Lethbridge Exhibition and at the Hay and Grain and Potato Show at Lethbridge, as well as the exhibits at the Seed Fair at Oyen in November.

JAMES MURRAY.

REPORT OF MR. H. W. SCOTT, DISTRICT AGRICULTURIST, SEDGEWICK

In this district there were thirteen School Fairs with 117 schools, in 1922, and 2,395 children growing garden products and 7,764 exhibits, 643 of which were livestock. There were seven Pig Clubs with 115 members, having 129 pure bred sows and 298 feeders. Two car lots were shipped to Calgary Fat Stock Show, and the children that went down with them entered the judging competition and in all were fairly successful in winning prize money in the classes open to boys and girls. In all, the children in this district took about half the prize money offered in the pigs and baby beef classes at Calgary, winning seven of the fourteen prizes in 1922 calves, and six out of the fourteen prizes offered for the 1921 calves. At the Spring Show in Edmonton the children also took about half the prize money offered and had more entries than there were total prizes offered.

Following the Edmonton Spring Show, with the assistance of Mr. Davidson, representing the Dominion Shorthorn Breeders' Association, we organized a Dual-Purpose Shorthorn Heifer Club, but when Mr. Davidson went out to secure the heifers he found they were not available in suitable condition and quiet enough for the purpose, so the club was dropped.

A Farm Bureau was organized at Hardisty that has been a real force in that district in arousing interest in fodder growing as well as in other things. A number of silos have been erected and dug and considerable increase in the acreage of sweet clover grown as a result of the activities of this organization. The Bureau has also assisted the livestock clubs in the district, has held a number of meetings and done good work generally. I have assisted a number to secure sires and dispose of desirable breeding stock, have had a number of classes in livestock judging, have assisted at agricultural short courses, judged at fairs and inspected and judged field crops, arranged meetings throughout the district, at some of which a number from the Department have taken part, addressed the Teachers' conventions at Provost and Camrose, and the Normal School students, assisted in the fight against the grasshopper, given some time to the local agricultural society, and other agricultural societies in my territory, addressed a number of U.F.A. meetings, using lantern slides, films and charts where possible, assisted a number in culling their flocks of poultry, digging silos and filling silos, and have assisted in getting the creamery at this point well under way. There has been a fairly heavy amount of correspondence in connection with these activities which has also been looked after.

The year's work, while being at times discouraging, has, I believe, been reasonably successful, and with a return of more normal conditions, with the cost of production lower, a more stable market and more rainfall, there should be a gradual change towards mixed farming in the district. The work with the young people is, I believe, the most hopeful and should be encouraged steadily.

H. W. SCOTT.

REPORT OF MR. M. L. FRENG, DISTRICT AGRICULTURIST, LETHBRIDGE

This office was opened at Lethbridge in June, 1921. The summer months were spent in obtaining a general survey of conditions throughout the south, as well as giving information along problems existing in various districts in southern Alberta. The chief difficulties were drought, soil-drifting, weeds, cutworms, grasshoppers and particularly farmers depending on one crop system, leaving the farmers without feed for stock or provisions for their families.

In the fall of 1921 our Department commenced supplying fall rye seed to farmers. I spent a great deal of time at this work, also encouraging the farmers to seed part of their summer-fallow in rye to ensure hay and pasture as well as grain crop. The fall was very dry and seeding had to be delayed owing to grasshoppers, so conditions were very unfavourable to getting the rye rooted well, causing considerable winter killing and some very light yields. However, while the rye crop last season was disappointing as a cash crop, it provided feed, which will be of great saving compared with former years when feed had to be shipped in.

The Department of Agriculture commenced giving relief to needy farmers in the fall of 1921 and the winter of 1922. A large area was handled from our Lethbridge office: relief requirements continued, coupled with hay, feed oats and seed grain. A few assistants had to be added to handle the work and considering the circumstances, I have reason to believe the very best judgment was practised in all cases by the Government agents from this office.

The grasshopper campaign commenced in May. While I was not personally responsible for this work, the distribution of supplies was handled from this office and naturally the farmers looked to us for information, resulting in a great deal of correspondence and investigation. I may say that the farmers appreciated the effectiveness of this campaign, and I am certain had it not been for government action, the hoppers would have destroyed all vegetation in the Lethbridge district.

With reference to farm problems I may say that I have spent a great deal of time and covered a good deal of country this last season. The territory has been too large to keep in close enough touch with the farmers. However, I have tried to encourage what we consider the most important things under present conditions, and I am satisfied that in nearly all districts there are a few who have taken up some of these methods, namely: keeping the land intended for summer-fallow clean, by discing or cultivating before plowing, thereby conserving the present moisture and preventing weed growth as well as germinating the weed seeds and destroying them before plowing, which also requires less cultivation to keep clean after plowing, thereby reducing to some extent the danger of soil-drifting. We have also encouraged the growing of corn and sunflowers and splendid progress has been made this last season. Several varieties of corn have matured and a splendid yield of matured corn as well as forage. I am confident that corn properly cultivated will do well, and is the surest and most valuable fodder crop in the dry area. A few farmers have successfully grown sweet clover, alfalfa, millet, broom and Western rye grass in the dry areas.

The most remarkable progress has been made with the trench silo. At least 100 of these silos were dug this last season and filled, either with corn or sunflowers. The farmers are very pleased with the results from these silos. Work along summer-fallowing substitutes with corn, has started. I have great faith in spacing a couple of rows of corn about 10 or 12 feet apart, north and south, and cultivating between the rows with the ordinary summer-fallowing implements. This method will not take too much out of the soil the year of fallow. It will check soil-drifting, prevent loss of moisture through winds and the stocks and stubble will hold snow in winter, adding moisture which would otherwise be blown off.

The value in feed should be at least equal to the cost of the summer-fallow. The corn fallow, where rows are spaced as above, should yield a better crop of grain the following year than the

bare summer-fallow, such as is usually practised. The methods mentioned are the foundation of mixed or balanced farming, and if this work is properly done, mixed or balanced farming and home-making will also follow.

We have had a number of farmers' meetings throughout the country with very good attendance. The inquiries by mail have gradually increased to the extent that we now require a permanent stenographer. The Lethbridge office is kept busy with the farmers calling to discuss various problems of agriculture. I look for a very busy season in 1923, and I look for the southern part of the province to go in for home-making, smaller farms, the growing of fodder crops and balancing their season of farming.

M. L. FRENG.

Report of the Recorder of Brands

H. A. CRAIG,

Deputy Minister of Agriculture.

SIR,—

I have the honour to submit herewith the following report on the work of this branch of your department for the year 1922:

During the year 708 horse and 1,092 cattle brands were allotted and recorded to their respective owners, while 225 transfers, and 23 changes were duly registered. Certified extracts of brands numbered 9, while searches and strays numbered 2,539, being a total of 4,596 transactions.

Compared with last year (1921) these transactions show a decrease of 188 horse brands, 212 cattle brands, 183 transfers and 19 extracts, while searches and strays give an increase of 166 and an increase of 1 change.

The following table shows the different transactions which have taken place since separate records for the province have been kept:

Year	Horses	Cattle	Trans.	Changes	Extracts, Searches and Strays
1906	1361	1894	384	38	73
1907	1030	1230	430	28	73
1908	1103	1225	421	29	292
1909	1308	1326	430	33	783
1910	1891	1672	524	34	1218
1911	1538	1280	362	32	1408
1912	1545	1542	374	16	1655
1913	1471	2059	419	11	1795
1914	1964	2629	395	18	1932
1915	1350	1899	743	27	1372
1916	1503	2833	463	28	801
1917	1839	3370	531	33	673
1918	2161	3455	617	40	985
1919	2079	3165	572	46	2125
1920	1363	2133	514	30	1944
1921	896	1304	308	22	2401
1922	708	1092	225	23	2548
Aver. 16 yrs.	1569	2132	482	31	1380

The number of new brands allotted during the year 1922, is the lowest number issued since the Province of Alberta was formed, but estray notices reached their highest number in that time.

The number of applications for renewals of brands during the year is 4,449, being 1,075 for the year 1921 and 3,374 for 1922. These, in keeping with applications for new brands, have also decreased in number.

A new brand book is being prepared for publication, which will contain all brands recorded for the years 1921 and 1922.

The number of documents received to the 3rd of May, 1922, was 3,956, while those despatched numbered, to that date, 19,357. All communications since that date have been registered in the general office.

Yours obediently,

S. G. CARLYLE,

Recorder of Brands.

Report of the Dairy Commissioner

H. A. CRAIG,

Deputy Minister of Agriculture.

SIR,——

I have the honour to submit herewith the report of the Dairy Commissioner's Branch for the year ending December 31, 1922.

I.—GENERAL.

You will note that, according to the statistical data attached hereto, the total value of Alberta's dairy production for 1922 is esimated at \$22,950,000.00. This amount is 10% less than that of the preceding year, due to the general lowering in prices of the various products. One notable feature about the year's operation is the increase in the production of creamery butter by two and one-third million pounds. The production of factory cheese was practically the same as that of 1921, but there are good prospects that there will be an increase both in the number of factories in operation and in their output in the immediate future.

DAIRY STATISTICS

(1) *Milch Cows on Farms:*

Year		Cows	Per Farm	Value of Cows	Each
1901	(Census)	46,101	4.9	\$ 1,734,942	\$37.63
1906		101,245	...	...	...
1911	(Census)	147,649	2.4	6,368,546	43.13
1912		157,922	...	...	...
1913		168,376	...	...	...
1914		179,068	...	...	...
1915		183,974	...	...	...
1916	(Census)	284,895	5.6	18,008,737	63.21
1917		325,861	...	29,083,000	89.00
1918		328,702	...	30,569,000	93.00
1919		336,596	...	29,957,000	89.00
1920		305,607	...	21,698,000	71.00
1921		423,838	...	20,312,000	48.00
1922		392,037	...	18,817,776	48.00

(2) *Total Annual Value of Dairy Products:*

1900	(Census)	\$ 546,476
1910	(Census)	7,855,751
1915	(Census)	15,895,586
1916	(Estimated)	18,466,311
1917	(Estimated)	24,794,506
1918	(Estimated)	27,500,000
1919	(Estimated)	31,625,000
1920	(Estimated)	34,000,000
1921	(Estimated)	25,500,000
1922	(Estimated)	22,950,000

(3) Creamery Butter Production:

Year	Creameries	Lbs. of Butter	Selling Value	
				Per lb.
1912	53	3,010,755	\$ 823,500	(27.35)
1913	49	4,115,587	1,090,475	(26.50)
1914	46	5,444,806	1,417,000	(26.03)
1915	57	7,544,148	2,021,448	(26.795)
1916	57	8,521,784	2,619,248	(30.736)
1917	66	8,944,171	3,414,541	(38.176)
1918	56	9,053,237	4,025,851	(44.469)
1919	53	11,822,890	6,132,739	(51.87)
1920	53	11,821,291	6,555,509	(55.45)
1921	44	13,048,493	4,543,007	(34.82)
1922	54	15,417,070	5,126,843	(33.25)

(4) Factory Cheese Production:

Year	Cheese Factories	Lbs. of Cheese	Value	
1912	6	40,000	\$ 5,600	(14.00)
1913	7	70,716	9,900	(14.00)
1914	5	70,581	10,590	(15.60)
1915	13	381,632	68,441	(17.93)
1916	15	745,122	154,453	(20.73)
1917	20	1,274,905	280,185	(21.97)
1918	11	552,834	130,911	(23.68)
1919	10	520,530	145,161	(27.9)
1920	7	398,750	110,355	(27.7)
1921	10	930,660	200,478	(21.54)
1922	14	931,992	183,860	(19.73)

CREAMERIES AND CHEESE FACTORIES

There were six cheese factories, eight combined cheese factories and creameries and forty-six creameries operated in the province during 1922. It was to be expected that the closing of



THE CREAMERY AT PEACE RIVER

the cream stations throughout Alberta would present attractive openings for the establishment of new creameries and the re-opening of others at points where the cream production was comparatively heavy. Two new creameries were established at Ponoka, one—a combined creamery and cheese factory—replacing the plant that had been operated there a number of years by the Edmonton City Dairy, Limited. Two new creameries were put into operation at Calgary, and are known as the Producers' and Consumers' Creamery and the Kenneth R. Simpson Creamery. The Innisfail Creamery, Limited, also built and equipped a plant at Innisfail and the Woodland Dairy, Limited, reopened the creamery that had formerly been in operation there for a number of years. Buttermaking was resumed also at the Central Creamery at Olds, the Crystal Dairy at Didsbury and at the Claresholm Creamery. New plants were put into operation also at Kitscoty and Peace River, the latter being now the most northerly creamery on the continent.

It is pleasing to note that the new plants that were established during the year are a credit to the industry. Well built, well conducted and generously patronized creameries and cheese factories cannot but add to the dignity and tone of the dairy business in the districts in which they operate. People like to do business with successful, prosperous-looking concerns.

New cheese factories were established and put into operation during the year by P. Burns & Co., Ltd., at Round Hill, Rossington and New Norway.

DAIRY LEGISLATION

The passing of certain amendments to the Dairymen's Act will undoubtedly prove to have been the outstanding event of the year in connection with our dairy marketing organization. At the provincial dairy convention which was held at Edmonton early in 1922, considerable stress was laid upon the fact that the quality of our creamery butter production had been gradually declining year by year since 1917, as indicated by the decreasing percentage of "special" grade butter for each year and a correspondingly increasing percentage of medium and under grades. While this state of affairs was not by any means peculiar to the dairy business of Alberta nor was it very difficult to account for, yet it was felt that the time had then arrived when a definite policy of "reconstruction" should be launched. A strong appeal was made to both the cream producer and the butter manufacturer to make it abundantly clear as to where each stood in this question, in relation to the other and to the general interests of our dairy industry. It was generally agreed that in view of market conditions and prospects something should be done not only to stop the decline in the quality of our creamery butter but also towards recovering as speedily as possible the ground that had been lost.

During the discussions at the convention it was urged by representatives of the producers' section of the Dairymen's Association that the system of operating cream stations in the province

constituted a heavy expense to the producers and that these stations should be eliminated or, at all events, considerably reduced in number. It was claimed that in view of the prospective further deflation of the prices of commodities, dairy products would also be affected, and that some of the facilities and services that had become accepted as necessary during the period of high prices would have to be readjusted to conform with the changing conditions.

Aside from the actual cost of marketing cream through cream stations another phase was brought out for discussion, namely, the direct and indirect effect of this form of marketing upon the quality of the cream which reached the creameries by the cream station route. After a thorough discussion an understanding was reached as between the producers' and manufacturers' sections of the association that the number of cream stations should be materially reduced, especially at points where several were in operation.

The matter did not rest there, however. Following the views so freely expressed at the convention, and accepting the representations made by the manufacturers' section of the Alberta Dairy-men's Association, the Minister of Agriculture brought a bill into the legislature providing for the amendment of The Dairymen's Act as follows:—

1. Section 43 of The Dairymen's Act, being chapter 16 of the Statutes of Alberta, 1907, is amended by adding thereto the following proviso:

"Provided, that on and after the first day of May, 1922, no association, corporation, company, person or firm shall operate a cream station and no person shall deliver cream to or accept cream from any cream station."

2. Section 46 of the said Act is hereby repealed, and the following substituted therefor:

"46. In the purchasing of milk, cream, or butterfat for the purpose of manufacturing, no person shall discriminate in the prices paid, by purchasing such commodity at a lower price from one patron than is paid by such person for the same commodity at the same time to another patron, after making due allowance for the difference in grade.

"(2) Where the purchaser supplied transportation other than railway transportation for such commodity purchased from a patron the cost of such transportation shall form a part of the purchase price and shall be deducted from the money paid to such patron for such commodity.

"(3) Any person violating any of the provisions of this section shall be deemed guilty of unfair discrimination and upon summary conviction thereof shall be liable to a fine of not less than fifty dollars and not more than five hundred dollars."

3. Section 47 of the said Act is amended by striking out the words "butter and cheese" where they occur therein.

The amending Act was passed by the legislature and assented to March 28th, 1922, section 1 providing for the elimination of cream stations; section 2 enabling the pooling of railway transpor-

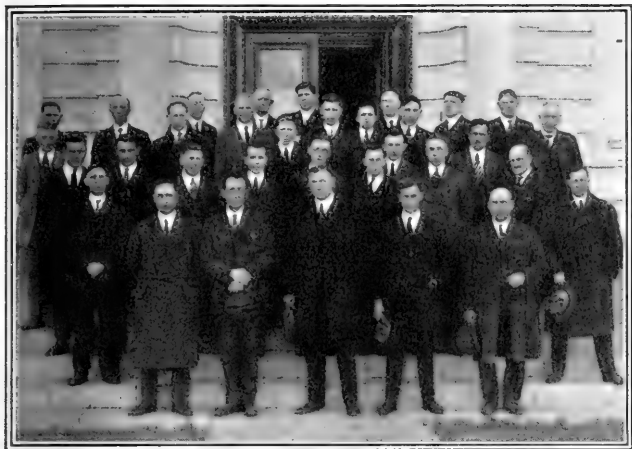
tation charges on cream shipments in that quotaions could be made uniformly on a shipping point basis. This practice was adopted by the creameries who received cream shipped by rail. Section 3 had the effect of somewhat widening the scope of section 47 of the Dairymen's Act, in which it is provided that the minister may specify the conditions upon which the department's grading services may be made available to any creamery operator in the province.

PROVINCIAL CREAM GRADING SERVICE

During one of the conferences which representatives of the manufacturers' section of the Dairymen's Association held with the minister the former asked, in view of the changed conditions that would be brought about by the amendment to the Dairymen's Act that the Government make provision for the appointment of official cream graders to be stationed at the several creameries in the province to grade the cream furnished by patrons, assuring them at the same time of their co-operation in carrying out a project of that kind to a successful issue. The minister agreed that his department would undertake the task upon the understanding that the cost of the service should be borne by the industry.

After the preliminaries had been arranged at a subsequent conference between the creamery operators and the department respecting the broad lines that were to be followed in the installation of this service, short courses of instruction and conferences were held at the department of dairying of the University of Alberta and at the provincial butter grading station at Calgary for those who had applied for positions as provincial cream graders. While the majority of the applicants had a certain amount of previous experience in the grading and testing of cream it was deemed expedient to bring them together at these short courses for the purpose of insuring a reasonable uniformity in the exercise of their duties at the creameries where they would be stationed.

Some of the applicants had several years' experience in dairy plant work, others had acted in the capacity as agents in charge of local cream stations in the province and as such, had previously qualified for graders' and testers' licenses under the provisions of the Dairymen's Act. Seven students of the University of Alberta attended the special short courses of instruction at Edmonton and passed the necessary tests to qualify for the work. While some of the latter had not as much practical experience in dairy work as some of the others, they had, by reason of their laboratory training, a full appreciation of attention to details which is so essential to correct results. They also had the mental outlook to appreciate the economic importance of the work upon which they entered. On the whole, the entire staff of graders rendered capable service.



CLASS OF GOVERNMENT CREAM GRADERS, ALBERTA UNIVERSITY, MAY, 1922

LET THE PEOPLE KNOW

It was quite natural that the change contemplated in the system of marketing cream in Alberta had attracted widespread attention, particularly among the producers who had up to that time marketed their cream by the cream station route. Neither could it be avoided that erroneous ideas were formed in many cases, notwithstanding the publicity that was given by the creamery operators, among their own patrons. The department then decided to issue a general statement covering fully the purpose of the new policy. As a matter of record, a copy of the first statement issued is given herewith. It speaks for itself.

"Recovery and retention of quality markets for Alberta butter is one of the chief problems engaging the attention of the Provincial Agricultural Department at the present time, and special efforts are being made in that direction. This is the main object in view in the elimination of the cream-buying stations in the Province, which is provided for in the amendments to the Dairymen's Act passed at the recent session of the legislature.

"The Department of Agriculture, and the members of the legislature who supported this move, recognized that it is what might be considered a radical step, but they are convinced from data in possession of the department, that it is a step in the right direction and that it will accomplish the results desired.

THE OBJECT SOUGHT

"The great object sought in the elimination of the cream stations is to clear the channel, to straighten out the line, between the producer of quality cream, and the market for quality butter. In other

words, it seeks to establish conditions under which the farmer who takes the trouble to put the quality into his cream—and certainly no one else can put it there—will get the full benefit of his efforts by reaching the best markets available and getting the price for his product that he is entitled to.

"This will be accomplished, the department believes, by the elimination of the cream-buying stations, which will result in the shipment of cream direct to creameries, and by the establishment of a system of Government grading at the central points.

MAY HAVE SHIPPING AGENTS

"The question immediately arises as to how the farmer is to have assurance that his cream will be properly looked after at local points, now that the cream-buying stations are done away with.

"The officials of the Agricultural Department declare that there is nothing in the new provisions of the act to prevent farmers or creameries from maintaining some one at local points to look after cream shipments, to care for them and keep them in proper condition. This statement has been issued after consultation with the Attorney-General's Department. The officials of this department declare their interpretation of 'cream stations' under the old provision, to be, in the spirit of the act, stations for the weighing, sampling, grading and testing of cream, and that they recognize nothing in the new provisions which will prevent the farmers, either co-operatively, or individually, or the creameries themselves, from maintaining agents at local points to look after the shipments.

ESTIMATE LARGE DIRECT SAVING

"The big question, of course, is as to how the elimination of the cream-buying stations is going to help the industry and raise the standard of the product. In the first place, it is estimated that the direct saving to the industry will alone constitute a very large item. It has been stated that the old system of cream-buying stations cost the industry \$250,000 annually. The new system of restricted service at local points which will be permitted under the amendments, should not cost more than \$50,000, it is estimated. In addition to this, the legislature has voted \$10,000 for Government grading. This would make a total under the new system of \$90,000, or approximately \$100,000. If these figures are eventually borne out, it would result in a direct saving of \$150,000 a year.

"Furthermore, the improvement in quality under the new system should result, the dairy commissioner confidently believes, in increased revenue of \$150,000 in the first year. This improvement would increase and be cumulative from year to year, increasing the amount of revenue to the industry and resulting in the securing and holding of quality markets for Alberta butter.

"Now, how is this improvement in quality going to be brought about? If the new system establishes conditions under which the producer of quality cream has some guarantee that he is going to reach the best markets and get the best possible price, this surely is going to lend encouragement to the production of quality cream. If the farmer realizes that there is no way under the new system that he can get the long price unless he puts the quality into his product—as has been said before, no one can put it there but himself—then he is going to see that the cream he ships out is going to be of the best quality he can produce.

"With the uniform and proper application of the grading principle at the creameries, the producer, in the marketing of his cream, has access to and a direct choice of three distinct markets, as expressed through the three standard grades of cream, and the differential price paid by the creamery operator on butterfat in each grade of cream. During the past year, this price differential established by the creameries amounted to three cents per pound of butterfat. This same differential is being paid at the present time; in other words when the price for butterfat in special grade cream is 33 cents per pound, the price per pound of butterfat in firsts is 30 cents, and in seconds 27 cents. Hence each individual cream buyer gives the producer his choice of three distinct markets.

DETERIORATION IN GRADES

"The producer of cream has the direct choice of three grades. In 1917, Alberta butter reached the highest point of quality in the history of the industry here. But since that year there has been a very serious deterioration in grade. This is shown by figures produced by the dairy commissioner, which give the percentage of total butter graded by the Government which reached the 'specials' grade and the percentage which fell into the medium and lower grades, as follows:

Year	Specials	Firsts	Seconds	Off-grades
1917	56.3	36.3	6.7	.7
1918	50.4	38.6	10.3	.5
1919	29.7	50.8	18.9	.6
1920	19.0	55.6	24.7	.6
1921	7.7	66.7	24.7	.7

"According to the 1921 report of the Department of Agriculture, the following average prices were realized in the marketing of creamery butter by the department to the wholesale trade during the past season. The percentage of butter in each grade is also shown:

Special	grade	6.66%	37.9c per pound
First	grade	67.17%	34.8c per pound
Second	grade	26.16%	32.2c per pound
Average price 34.4c per pound			

"The foregoing figures show clearly that unless an immediate and determined effort is made to increase the production of high grade butter, the 'special grade' markets that have been available to us in the past may, to a large extent, be obliged to look elsewhere for supplies. It certainly would be poor business on the part of the dairymen of Alberta deliberately to choose the lower grade and the lower price markets as an outlet for their surplus dairy products.

"It will be seen then that while in 1917 more than half the butter graded reached the highest grade, yet in 1921 the percentage of high grade butter had dropped to 7.7 and there had been a consequent increase in the quantity of low grade butter. It is true that the amount of butter graded totalled only 50% of the total output of the province, but it is pointed out that this 50% is the portion of the total production that went to outside markets, the other half of the total production largely having found home consumption.

WHO IS RESPONSIBLE?

"Where has the fault been? Does the responsibility really rest with the producer? Other figures produced by the dairy commissioner will show that the responsibility does lie with the producer directly. Out of a total of 7,853 churnings graded in the year 1921, 50% of them showed more or less stale cream flavor.

"The creameries had nothing directly to do with that, excepting insofar as they failed to express grades. Taking it by and large, the

work of the creameries and of the mechanical end of the industry has kept up to standard through all these years. The fault has been with the flavor. Other figures will show how the matter of quality has been neglected at the very time when it should have received attention. In May and June of last year, when the market was rather slack, 14.9% of the butter graded was marked 'special' and 16.6% marked 'seconds.' But in July, when the market picked up, when orders began to come in, only 3.6% of the total graded was marked 'special' while the percentage of low grade butter had increased to 33.5%. This can be taken to mean only one thing, that when the market was dull, and in danger, attention was paid to quality, but when the market was brisk and there was good demand, quality to a large extent was neglected.

NOTHING BUT BEST WILL SUIT CONSUMER

"Producers of cream should be seized with the all-important fact that their ultimate market, the market they must be careful to cultivate, is not the buyer of their cream, but the ultimate purchaser of the butter made from that cream. In the past many cream producers have become imbued with the notion that once they have disposed of their cream to the cream buyer, their troubles are over. Perhaps they have obtained a relatively good price for a poor grade of cream and they go home satisfied. But that is only a temporary advantage. The road to continued success is longer than that. It stretches right down to the door of that discriminating personage, the ultimate consumer of the butter, and nothing but the best will suit him. The marketing of a quantity of low grade cream very soon finds its reflection in a lowered standard of butter, and a consequent falling off in price for cream. The producer cannot continue to be careless of his quality of cream. He suffers in the long run, for the price reflection follows all the way back up the line from the butter consumer to the cream producer. It is only by persistently giving attention to production of quality cream that the producer can be assured of continued top prices for his product. It is not the cream buyer who controls the price of cream. That price is controlled by the supply and demand for quality butter.

"Now what has been the experience of other provinces in this matter? The Department of Agriculture has received information from both Saskatchewan and Manitoba, as to their experiences. The Saskatchewan Department of Agriculture says: 'Closing of buying stations has already shown marked improvement on quality of butter. Affords more effective and less expensive instructive and educational work from the dairy branch. Absolutely no demand on the part of producers or creamery operators to re-open the stations.'

"Manitoba says: 'Increase of 25% in the output of No. 1 creamery butter from some creameries since the closing of the stations a year ago. There is no request for re-opening.'

"The Department of Agriculture of Alberta is confident that the step has been taken, which will bring the results. It is prepared to co-operate in any way it deems possible to aid the producer in improving the quality of his cream and getting the best price possible for the product."

Below is a copy of the letter that was addressed to the individual creamery operators together with the authorized form of agreement. Section 6 of the agreement read as follows:

I, _____ do hereby agree that the Dairy Commissioner may arrange for the grading of the cream furnished by patrons to the said _____ according to the provisions of the Dairymen's Act and Regulations, and during the period of such arrangement to pay the Department of Agriculture at the end of

each month an average rate, fixed by the said Department, to cover the pro rata cost of such cream-grading service. The said rate is to be based upon the quantity of butterfat contained in the cream so furnished.

A similar provision was incorporated in the form of agreement which covers the marketing of creamery butter by the department. The operators of the several creameries entered into the agreement and the cream-grading service was put into the field on Monday, May 8th, 1922. The letter sent out was as follows:

OFFICE OF THE DAIRY COMMISSIONER
Department of Agriculture

Edmonton, April 22nd, 1922.

Dear Sir:—

At the request of the manufacturers' section of the Alberta Dairymen's Association, following the passing of the 1922 amendment to the Dairymen's Act, the Department of Agriculture has agreed to organize and furnish a temporary cream-grading service to the creameries of Alberta, commencing on Monday, the 8th day of May next.

An appropriation of \$40,000 for this work was included in the estimates by the Government and voted by the legislature upon the understanding that the cost of this special service should be refunded to the Government through a uniform assessment on the pounds of butterfat received in the cream by the creameries, during the continuance of the special cream-grading service. The initial appointment of cream-graders will be for a period of five to six months and it is estimated upon the basis of last year's production that practically full time service will cost in the neighborhood of one-third of a cent per pound of butterfat. The continuance of this service will then become a matter for the joint consideration of the creamery operators and the department.

The special cream-graders will, in the course of their duties, follow the grade standards as already defined by Regulations under the Act. They will take and forward to this office copies of the daily records of cream received at the creameries and the department will afterwards furnish each creamery operator with a weekly summary (in percentages) of cream grades as received by all the creameries and in a confidential form similar to the summaries that have been issued of the butter grades. These summaries will be compiled and issued at the special request of the creamery operators' meeting at Red Deer on the 6th of April, and the records so forwarded by the graders will be available only for the use of the department.

In undertaking this new and somewhat unusual line of work the department fully realizes that it can be made a complete success only in so far as we shall have the good will and co-operation of the creamery operators in carrying it out. Since the initiative came from them the department counts upon their full support.

You will find enclosed a copy of the amendment to the Act and you will find also, in triplicate, the new form of agreement covering the grading services. This agreement may be dated, signed, witnessed and returned for completion. If there be any point in the amended agreement or in this letter that does not appear sufficiently clear to you I shall be glad to hear from you and give you such further information as you may desire and in so far as I can.

Faithfully yours,

Dairy Commissioner.

SIX MONTHS' RESULTS

It will be of interest now to refer to the results of the operations of the six months, May to October inclusive. In this period the provincial cream-graders classified 27,393,303 pounds of cream.

This cream contained, according to the Babcock test, 9,104,777 pounds of butterfat, the average test being 33.24%. The butterfat in the cream was classified as follows:

Grade	Butterfat	Proportion
Table Cream	177,827 lbs.	1.9%
Special Grade	2,717,456 lbs.	29.9%
First Grade	3,483,781 lbs.	38.3%
Second Grade	2,643,875 lbs.	29.0%
Off Grade	81,838 lbs.	9%
Total	9,104,777 lbs.	100.0%

Since the question is sometimes asked as to what relation the grades of cream bear to the grades of butter manufactured from it, the following table shows the classification of the 6,204,573 pounds of butter which were graded at the department's butter grading stations at Calgary and Edmonton during the six months in question.

Grade	Per cent.	Approximate Selling Price
Special Grade	26.8%	35c
Firsts (40)	35.0%	34 ¹ / ₂ c
Firsts (39)	19.0%	33 ¹ / ₂ c
Seconds (38)	13.7%	32 ¹ / ₂ c
Seconds (37)	4.2%	31c
Off Grade	1.3%	29 ¹ / ₂ c
Total	100.0%	

In the right hand column of the foregoing table, the relative selling price is given for the different grades of butter in car lots. This will indicate the financial reason for the betterment in grade.

Figures are given elsewhere that will show the very marked improvement that was noted in the quality of our creamery butter for 1922 as compared with that of the preceding year. Regarded from the point of view of the total results attained from the changed cream market conditions that were brought about by last year's amendment to the Dairymen's Act, and the arrangement entered into between the creamery operators and the department for the grading of cream, it may fairly be said that this arrangement has been an advantage to the dairy industry as a whole. The cream-grading service was a pioneer effort, and like all other pioneer efforts, it is capable of being improved as a result of experience gained. Take conditions as we find them, an annually increasing surplus production and the constantly recurring problem of profitable marketing, it is essential that the payment-based-upon-quality principle must be fully developed and maintained in the marketing of cream as well as in the marketing of butter.

In December, 1922, the department issued the following statement showing the results of the new service for six months, May to October, these six months being the period in which the surplus is produced, and the period in which it is most difficult to improve quality:

"When Government grading of cream was established in Alberta last May, following the elimination of the cream-buying stations by legislation, claims were made for the new system which even some of its friends believed were somewhat optimistic.

"It is now December, and the experience of a little more than six months has more than justified the claims that were made for the new system. Much of what was hoped would be accomplished in a year has been accomplished in half of that time, and figures have been presented to the Minister of Agriculture by the Dairy Commissioner which prove conclusively that direct returns to the producer have been much greater than anticipated.

"In the first place, it will be remembered that it was pointed out that, taking as a basis the butter that had been graded by the Government during the past few years, there had been a gradual deterioration in grade, and that in the period between 1917 and 1921 the percentage of 'special' grade butter had dropped from 56.3 to 7.7 and that it was hoped by eliminating the cream station and establishing the handling of cream on a direct shipment basis, with Government graders at the creameries the trade channel between the producer and the consumer would be cleared so that the cream producer would get the full benefit of the quality which he put into his product. This hope has been more than justified by the experience of the past six months. The following table shows not only how the deterioration in grade has been checked, but how the improvement in grade has been such that the product will, before this year is out, have climbed again to the status of 1919.

	1921	1922
Butter Graded, May to Oct., lbs.	5,680,015	6,204,573
Special Grade	8.0%	26.8%
First Grade flavour Score 40 points	30.1%	35.0%
First Grade flavour Score 39 points	35.8%	19.0%
Second Grade flavour Score 38 points	19.1%	13.7%
Second Grade flavour Score 37 points	6.0%	4.2%
Off Grade	1.0%	1.3%
Total	100.0%	100.0%

"So much for the improvement of the quality of the butter. What has been the direct benefit to the producer in dollars and cents? During the six months from May 1 to October 31 the government graders stationed at the 46 creameries in the province classified cream containing over 9,000,000 lbs. of butterfat. In spite of the fact that during this time the general market for creamery butter was lower than that of 1921, and after making due allowance for this fact, the cream producers received this year nearly two cents more per pound butterfat, direct shipment basis, for special grade cream, and those who disposed of their cream last year on a cream station basis, this year received six cents more per pound of butterfat. This means that during these six months the creameries have paid the producers at least \$250,000 more for their butterfat than last year, with the cream stations in operation, and more than justifies the claim made last May that the new system would effect a yearly saving of \$150,000 to the dairy industry. Generous praise is due

to the creamery operators of the province for loyally carrying out their part in this practical demonstration of 'vertical' co-operation, and also to the thousands of farmers who realized the situation and responded to the call for quality production."

LICENSES ISSUED UNDER THE DAIRYMEN'S ACT

There were issued during the year, 13 licenses in Form "A" to testers of milk and cream; 137 licenses in Form "B" to testers and graders of milk and cream, and 60 licenses in Form "C" to operators of creameries and cheese factories. The license fees amounted to \$600.00. Owing to the fact that the recent amendment to the Dairymen's Act caused the closing of the cream stations which had been in operation in the province, the number of licenses issued was considerably less than for the previous year.

PROSECUTIONS

It was found necessary during the year, in five cases, to lay information against licensees for violation of the provisions of the Dairymen's Act. The five cases were prosecuted and disposed of as follows:

Pleaded guilty—fine imposed.....	4
Adjudged guilty—fine imposed.....	1
Total	5

Three out of the five charges were prosecuted under Section 43 of the Act, and the remaining two under Section 46.

II.—BUTTER MARKETING SERVICE

As in former years the department undertook to market creamery butter for any creamery operator in the province who wished to avail himself of that service. The following tables show the quantity of butter that was handled for a number of creamery operators during the winter season 1921-22 and the summer season of 1922 respectively. The average selling price is shown for the butter of each creamery. The variation in the average selling prices is due largely to the grade of the butter, the time of season when it was forwarded for marketing and the current market price obtainable at the time of selling.

The percentage and average selling price of the butter in each grade handled during the summer season, is shown in the following table:

Grade	Per cent. 1921	Per cent. 1922	Price per Pound, in cents	
			1921	1922
Special	6.66	35.83	37.09	35.40
First (40)	31.00	49.19	36.33	34.11
First (39)	36.18		33.55	
Second	24.91	14.73	32.28	32.33
Off Grade	1.25	.25	31.62	28.65
Total and Average	100.00	100.00	34.36	34.23

TABLE—SUMMARY OF BUTTER SALES, WINTER SEASON, 1921-1922

Creamery or Shipper	Pounds of Butter Sold	Selling Price at Calgary and Edmonton	Average Price per Pound Cents
J. P. Krause, Sundre	1,694	\$ 630.70	37.23
Valhalla Co-Operative Creamery Association, Valhalla	19,565	6,863.93	35.08
The D. Morkeberg Creamery Co., Ltd.— Elnora	2,352	898.80	38.21
Markerville	3,640	1,413.44	38.83
Lacombe	2,016	780.08	38.69
Lakeview Creamery Association, Elnora	7,504	2,538.48	33.83
Red Deer Creamery, Red Deer	9,507	3,180.82	33.56
Wainwright Creamery Company, Ltd.	16,216	5,255.31	32.41
Viking Co-Operative Creamery Association, Viking	49,616	17,386.32	35.04
Hanna Creamery, Hanna	31,744	10,654.68	33.56
A. E. Kofoed, Coronation	34,661	11,498.20	33.17
Bashaw Creamery, Bashaw	2,800	1,038.52	37.09
Totals and Average	181,318	\$62,139.31	34.27

TABLE—SUMMARY OF BUTTER SALES, SUMMER SEASON, 1922

Creamery or Shipper	Pounds of Butter Sold	Selling Price at Calgary and Edmonton	Average Price per Pound Cents
Valhalla Co-Operative Creamery Association, Valhalla.....	57,276	\$ 19,277.02	33.66
Lakeview Creamery Association, Elnora.....	60,368	20,449.59	33.87
D. Morkeberg Creamery, Markerville....	57,749	19,986.51	34.61
Red Deer Creamery, Red Deer.....	62,384	21,521.79	34.49
Viking Co-Operative Creamery Association, Viking.....	280,742	98,386.04	35.05
Hanna Creamery, Hanna.....	157,248	52,538.22	33.41
A. E. Kofoed, Coronation.....	126,132	42,284.34	33.52
W. T. Nelson, Sunnyslope.....	20,787	7,084.61	34.08
Beaver Lake Farmers' Creamery Association, Ryley.....	13,090	4,593.25	35.09
Totals and Average.....	835,776	286,121.37	34.23

III.—THE GRADING OF CREAMERY BUTTER

The following table gives the comparative figures for the total creamery butter production for the province for a term of years and the proportion which has been handled through the department's butter grading service. The right hand section of the table indicates the classification of the butter graded during each of the years shown. The figures for 1922 show that on the whole the quality of the year's butter graded as equal to the standard of 1919, and speaks well of last year's team work of the dairy interests towards getting back to the high quality standard of a few years ago. Further it must be admitted that in the face of these figures the market prospects for the immediate future look bright.

GRADING OF CREAMERY BUTTER—ALBERTA—1917-1922

Year	Creamery Butter Manufactured, Pounds	Creamery Butter Graded by Department of Agriculture				
		Pounds	Percentage in each Grade			
			Special Grade	First Grade	Second Grade	Off Grade
1917	8,944,171	4,644,046	56.3	36.3	6.7	.7
1918	9,053,237	5,427,134	50.4	38.6	10.3	.5
1919	11,822,890	6,830,308	29.7	50.8	18.9	.6
1920	11,821,291	6,120,325	19.0	55.6	24.7	.7
1921	13,018,193	5,954,991	7.7	66.7	24.7	.9
1922	15,175,000 (Est.)	7,261,219	27.5	55.0	16.3	1.2

IV.—INSTRUCTION WORK

Aside from the activities of the dairy branch staff, in connection with the services reported herein, other lines of work were carried on during the year, such as dairy inspection and instruction under the provisions of The Dairymen's Act, instruction in dairying at the Provincial Schools of Agriculture, and attendance at a considerable number of public meetings called for the purpose of discussing dairying in its various phases.

V.—ACKNOWLEDGMENT

In closing this report, I desire especially to commend the fine team-work which the creamery operators and patrons brought to the big task of the season, viz.: the general improvement of the quality of our creamery butter production.

Though the means adopted to that end, and recorded elsewhere in this report, were in some respects of a pioneering character, the people most concerned proved their willingness to give the system a fair trial. The results appear to have justified this attitude on their part.

Respectfully submitted,

C. P. MARKER,

Dairy Commissioner.

Report of the Provincial Veterinarian

H. A. CRAIG,

Deputy Minister of Agriculture.

SIR,—

I have the honour to submit herewith the annual report of the Provincial Veterinarian's branch of the Department of Agriculture for the year 1922.

The work of the branch is concerned with general conditions relating to the health of the stock in the province, the supervision of the health and care of the livestock kept on the demonstration farms, assisting the farmers and ranchers in the prevention and eradication of those diseases which do not come under the Animal Contagious Diseases Act of the Dominion Government, and educational work relating to diseases of livestock.

EDUCATIONAL WORK

The courses in Veterinary Science have been carried on this year, as in former years, at the Agricultural Schools at Olds, Claresholm, Vermilion and Raymond. These courses are conducted during the regular school term, and include instruction in the care and treatment of sick animals, the different methods of treating wounds, as for example, barb-wire cuts, and subjects relating to parturition, care of foals and foal troubles. In addition to the lectures given by the instructor at each school, special discourses relating to the contagious diseases found in the province and with the experimental work carried on by this department in this connection, are given each class by the Provincial Veterinarian. The veterinarians who are giving tuition in this science are stationed as follows: Dr. Sweetapple at Olds, Dr. Buchanan at Claresholm, Dr. Moon at Vermilion and Dr. Haworth at Raymond.

The lectures in veterinary science given to the senior classes at the College of Agriculture, University of Alberta, concentrate more fully upon the ways and means of preventing outbreaks of diseases affecting stock, and with the best methods of eradication. A number of outbreaks of disease, in different parts of the province, have been successfully checked and stamped out before they could spread to any great extent, by prompt action and by the holding of meetings in those districts where the services of a qualified surgeon were not available. We are convinced that our assistance and work in this direction have proved beneficial to the improvement of the livestock in Alberta.

CASTRO-ENTERITIS

As in the past three years, the province still suffers rather severe losses from this disease, in spite of the fact that it effects cattle only. The symptoms are very similar to those of hemmo-

rhagic septicemia, and for this reason there is a considerable amount of confusion in the diagnosis of trouble from this cause. Many losses attributed to Hemorrhagic Septicemia are in reality caused by Gastro-Enteritis.

Occurrence. — The three months between October 1st and January 1st is the time of the year when the disease is prevalent, and upon making investigation we find that some stock kept on premises with good running water and excellent forage, are affected. We therefore conclude that the trouble is not altogether due to scarcity of pasture or poor food.

Distribution. — The supposition that this disease is of a very contagious nature is contradicted by the fact that in some instances a herd almost completely isolated has become affected, and many reports show that only one animal went down with the disease, which appears in sporadic form, and in only exceptional cases do a large number of the animals become affected. The disease has, so far, been confined principally to the northern and central parts of the province.

Susceptibility. — An animal may contract the disease at any age, but is more susceptible after it has passed the age of one year. The majority of the cases are met with in yearlings and two-year-olds.

Symptoms. — There are several symptoms of the disease, including lack of appetite, general lassitude and considerable emaciation, the coat of the animal becomes staring, the muzzle is dry, the ears droop and the passages are hard and often coated with mucus or blood. The most characteristic symptom is the bloody diarrhoea which sets in towards the termination of the malady. In some cases the animal is affected very suddenly and death follows quickly, sometimes within a few hours, while in others the disease is lingering and may possibly stretch out over a period of two weeks. Frequently, in acute types of the disease the temperature may be very high, quite often registering 106.7°.

Pathological Examination. — The disease is found usually in the fourth stomach and intestines of the animal, where a well marked inflammatory condition is noticed. In extreme cases the diseased areas extend through the intestinal wall, showing red discolorations on the outside.

Treatment. — The best results have been obtained by placing the animal affected in good warm quarters, free from dampness, and the administration of linseed tea, boiled milk, oatmeal gruel three times a day, or rice water, have all been found to assist greatly in effecting a cure. Good results have also been obtained by administering tannic acid three times daily in one-dram doses. In some cases, tincture of catechu one dram three times a day, has given the desired results, but this administration is not reliable. Hydrochloric acid in teaspoonful doses in one pint of water, and subnitrate of bismuth one to two drams, have both been tried, but neither of these drugs have met with the success of the tannic acid

treatment. The inoculation of Hemorrhagic Septicemia Vaccine has in some cases apparently been beneficial in assisting recovery. From our reports and data in connection with this particular disease we should not consider it of a stubborn nature, and our opinion is that the majority of the cases would recover if they were properly housed and treated with the remedies recommended.

EXPERIMENTAL WORK

The experimental work on contagious abortion and sterility has been carried on at various points in the province. Taking into consideration the fact that the cases under observation were widely scattered, which made it difficult to gather detailed data, and also that we were unable to make microscopical examinations as frequently as we should have wished, it is gratifying to know that despite these handicaps, this important work has made some progress.

We are fully convinced that a more careful study and practice of sanitation and disinfection of farm buildings by the farmers and stockmen would result in a marked improvement in the condition of the stock. Not only would outbreaks of contagious abortion be considerably lessened, but all other diseases as well would have less chance of spreading.

From the investigations of the past few years we believe the disease can be successfully prevented and controlled by the following of the application of certain principles, and we recommend that the following measures be applied:

1. Farmers should breed and raise their own cattle, thus excluding the danger of introducing outside infection.
2. In herds where abortion has occurred we believe every cow should be handled as though she were known to be infected, and regarded so until she is proved otherwise.
3. We are advocating a separate stall, or better still, a small stable on every farm, for cows at calving time. It should be comfortable, convenient and constructed so as to be easily disinfected.
4. Prior to parturition, the cow should be taken from the herd and placed in the maternity barn. She should be kept there until all discharges following calving have ceased.
5. Cows believed to be about to abort, or showing even slight symptoms of aborting, should be placed in the maternity stable.
6. Straw from the maternity barn, all after-births, aborted calves, or ones which have died at birth, must immediately be burned, or if buried should be covered with quick-lime.
7. The disinfection of the building must be thorough. Strong solutions of Creolin, Kreso, or Corrosive Sublimate are suggested, and in addition it may be fumigated with formaldehyde before another cow goes into it.

8. Any cow showing symptoms of abortion or nearing normal calving should be placed in the maternity barn. All pregnant cows should be seen and carefully examined by the herdman every day.

9. All newly purchased animals should be kept isolated for at least thirty days. The test for the determination of their health should be applied before they are allowed to run with the herd.

10. Herd bulls should be kept for home cows only, and not for neighbors' cows.

11. When abortion has occurred in the stable the cow should be isolated immediately, the fetus and placenta burned or buried, and the stable cleansed and disinfected thoroughly. Where abortion occurs in the pasture it should be handled in the same way; the ground in that vicinity should be well sprayed with a strong disinfectant, or covered with several inches of lime.

12. Good, clean food and water are essential to have healthy stock. The feed should be preserved and stored properly, guarding against contamination with disease-producing organisms.

13. Do not feed unsterilized milk from herds where abortion is present, or from creameries, to calves or sows. Sows are susceptible to contagious abortion infection.

14. From our experience we find that many of the vaccines and serums claiming to prevent abortion, are useless, and until we can secure better results from their administration we advise against their use.

15. Many are advocating the agglutination and complement-fixation tests for bovine abortion. We believe it is accurate in picking out infected animals, but the difficulty seems to be in obtaining the blood samples in the proper manner. It is possible that, with trained men to conduct the tests, much useful work could be done along this line.

STERILITY

Success in livestock breeding depends upon the capability of the animal to reproduce young. Without this capacity, the worth of the animal amounts to little.

Until the last few years, sterility in cattle was given very little attention, but of late breeders of pure bred stock are seeking assistance in the handling and treatment of non-breeders. Formerly, it was the custom, if the animal was fit for food, to have it slaughtered after a few unsuccessful attempts to get it started breeding, but now owing to the value of pure bred cattle and the wonderful extension and development in breeding, it naturally behooves the veterinarian to gather all the information he can, along the lines of prevention and treatment of sterility. Time will not permit in discussing the various forms of congenital and acquired types of sterility, but I would endeavour to draw attention to a few forms which are continually met with, and the result of them as we see it.

Disturbance of the Ovaries.—Retention cysts constitute the type of perhaps 75% of our sterility cases. Some of the best authorities claim that they are all of inflammatory origin, and from our experience in examining the ovaries of hundreds of cows at the various packing plants we have come to the conclusion that this is certainly correct. We also note with considerable interest that a very small percentage of cattle become pregnant in the left horn of the uterus, and that cysts are much more common in the right ovary than in the left. So much importance is now placed upon this right ovary that we believe that if we can once get it functioning, the animal will invariably start breeding again.

Metritis, Acute and Chronic.—This is very frequently seen, and two of the worst cases in our experience were of the latter type. It is important to determine the character of the inflammatory process and govern the treatment accordingly. Personally, we like the application of astringent solutions such as zinc sulphate and potassium permanganate for the acute form, but in chronic metritis we take up the fluids with absorbent cotton and spray the cavities with ichthyol.

Inflammation of the Cervix.—We have always placed a great deal of importance upon infection of the cervix. We have kept track of all our sterility cases and we have yet to find one cow start to breed until the inflammation has been removed. Fortunately, the application of Lugol's Solution will usually rectify the trouble, unless through extension other parts of the genital tract become involved.

In order to give you an idea of the complications met with in treating sterility cases, the following Case Reports may be interesting.

GOITER

In 1920 this branch started investigational work in a series of diseases which appeared in certain areas throughout Alberta, and which were causing considerable loss among different classes of farm animals. These diseases are familiar to the stockmen as "big neck" in new-born calves and lambs, and "hairless pigs" or "hairlessness" in new-born pigs.

We have endeavoured to ascertain as far as possible, the distribution of this trouble, and have tried to familiarize ourselves with the conditions under which the affected herds were fed and cared for, also the appearance of the soil and the water supply on the farms where goiter was noticed. From our present knowledge of the disease we believe the malady is most frequently found in districts in close proximity to the foothills of the Rocky Mountains and along those streams whose source is there. It must not be concluded that all outbreaks occur at these points, for we have found cases where the nearest stream was many miles away, and there was no apparent reason for goiter trouble. As mentioned previously, our investigational work has been confined almost entirely to the disease in cattle, sheep and hogs, and the fact that they frequently occur in the three species in the same locality at

once would indicate that they are of a similar type and are in all probability of a common derivation. We know that after examining many thyroid glands of all classes of animals affected, one cannot fail to notice the relationship between the three conditions.

Cause.—We hope, a little later on, to have some suggestions to offer as to the cause of goiter in young animals, but as our investigations are only in the incipient stage we are not as yet in a position to make definite statements. We have gone to a great deal of trouble to collect samples of water from the various goitrous areas throughout Alberta, and until such time as a complete analysis of these specimens has been made we cannot eliminate the water supply as the possible source of the trouble. The various feeds and soils from these districts are also receiving attention, but what part they play, if any, in the cause of goiter remains to be seen. The theories advanced that extensive feeding of green-feed, forcing animals to eat snow in place of giving them access to water, drinking snow water and lack of exercise are contributing factors all worthy of careful study. We know that by administering certain drugs to pregnant animals the trouble can be overcome, therefore we would think that in all probability a lack of these essentials might be responsible for the trouble. From experiments carried out, we know that there is a decreased thyroid secretion in goitrous animals. It has been proved beyond doubt that the feeding of iodine rectifies this deficiency. Having this knowledge, we anticipate that it will eventually lead to the discovery of the cause itself. Before leaving the cause of goiter we wish to draw to your attention the significant fact that weather conditions seem to play an important part in the number of calves affected. Our observations show that long winters and late snow storms increase the number of weak or "big neck" calves, while with an early spring or with calves born in the fall the mortality is considerably lower.

Horses

The relationship between "hairless pigs," "big neck" in calves and lambs and navel disease as well as foals born weak, is now commanding a great deal of attention. We have a large number of weak foals born each year in certain districts in this province, and for some time we have been getting excellent results from following the same line of treatment as suggested as a preventive for goiter in other classes of livestock. We notice on certain farms where weak foals are commonly met with that the gestation period is frequently extended to long over time. In nearly all cases, the foals show lack of vitality, knuckle at the fetlocks, breathe laboriously, the pulse is increased, a marked jugular pulse is noticed, the animal usually lives from two days to a week, getting weaker gradually until death takes place.

We have a considerable number of mares under observation this winter, and are carrying on treatment as suggested under that heading.

Cattle

It is claimed by many people that adult cattle in the goitrous districts are affected with enlarged thyroids. We have examined many of these animals at the stockyards and packing plants, but fail to detect it in the number we are led to expect. We also notice that a large percentage of the cows which gave birth to "big neck" calves have, to all appearances, normal thyroids. There are differences of opinion as to the loss from goiter. We believe many affected calves show great weakness at birth and no enlargement of the glands whatever. In a well marked case there is, in addition to the swelling, difficult breathing and a jugular pulse.

Sheep

Lambs affected with goiter show at birth a swelling in the throat identical with that in calves. Occasionally we find them practically without wool and are either very weak, dead at birth or die shortly after. We believe the mortality in lambs from goiter, is probably greater than in any other class of livestock. We notice with interest, that where breeding ewes are pastured in one locality during the summer but fed at another point during the winter, frequently no loss from goiter occurs, while other flocks may be kept on the same range throughout the year and the loss will run as high as 50% or even more. We also notice that due to the thick wool and fullness of the neck, goiter may be harder to detect in lambs than in some other kinds of livestock, but it has been our experience that lambs suffering from "big neck" respond more readily to treatment than any other animal.

Hogs

Disturbance of the thyroid gland in the hog shows itself in the form of partial or complete hairlessness in new-born pigs. It may affect the entire litter or perhaps only one pig may show the condition. Frequently hairless pigs are born alive, but they usually die in the course of a few hours. Occasionally, one recovers and after a few weeks appears perfectly normal. Some of the litters under our observation last spring had only a slight loss of hair, but the coat was thin, fine and downy-like. These pigs seemed to be weak and lack vitality, but under careful treatment they eventually recovered. We believe the hairless pigs problem can be successfully solved if it be taken up systematically. From our records we can cite several cases of sows which were under our observation this year, and treated according to our directions, and which produced a litter of normal pigs for the first time in three years. For the benefit of those interested in hog raising we would suggest following the directions given as to the prevention of this trouble.

Treatment. In the various experiments tried out, the administration of Potassium Iodide has given us excellent results. We believe if given throughout the period of gestation the loss from goiter will be greatly lessened. It must be borne in mind however, that this drug must be given regularly and carefully and not in a

haphazard manner. We recommend it be given to all pregnant animals in districts where goiter is prevalent. Any of the following methods of treatment may be followed, depending upon conditions under which the stock is kept.

Potassium Iodide Internally.—From numerous experiments it has been found that these animals should receive two grains of potassium iodide daily. It has also been found that a solution is the most convenient manner in which it may be administered, especially where the animals are stabled regularly.

1. One ounce of potassium iodide dissolved in one gallon of water is the proper proportion and one tablespoonful of this solution should contain two grains of the drug and constitutes a dose each day. For mares and cows it may be sprinkled on the feed. In the case of sows it may be mixed with the feed or water, and when there are several sows in the one pen one tablespoonful may be added for each animal. Where it is desirable to give it to range cows or large numbers of ewes it may be mixed with coarse salt. For this purpose it may be prepared as follows: "Dissolve five ounces of potassium iodide in as small a quantity of water as possible. Spread 100 lbs. of salt evenly upon a clean floor and sprinkle the potassium iodide solution carefully over it. When dry, place in boxes in the yards where the animals may have access to it at all times."

2. It has been suggested that potassium iodide may be effectively administered in the drinking water "one quarter of an ounce placed in the trough being sufficient for 50 cows." Our experience has been that this is an unsatisfactory method of handling the drug.

3. At the suggestion of various experimental stations we have tried pouring tincture of iodine directly on the skin. As last year was the first opportunity we had of trying out this method, we are not as yet in a position to state definitely its efficiency, but it has apparently produced the desired results. It was applied in one-dram doses to the backs of horses and cattle and 30 drops in the cases of sheep and hogs. It was applied every two weeks during gestation, and placed in a different spot each time.

4. The subcutaneous injection of tincture of iodine advocated by many was also tried out by us. We believe this method could be used to great advantage, but on account of requiring a lot of time to make the injection and the inability of some to use the hypodermic syringe the experiment was not carried out as far as it might have been. From the data we have, this method is apparently not giving any better results than the others, but we intend to carry it on further the coming year.

THE STALLION ENROLMENT ACT

The number of grade stallions enrolled in 1921 and 1922 was much below the figures for previous years, owing, of course, to the fact that these have not been eligible for enrolment in the southern part of the province, i.e., in practically all that part of the province south of the Saskatchewan River. The law prohibiting

the enrolment of the grade stallion was passed in 1920, and we believe has helped considerably in creating a sentiment in favor of the pure bred stallion.

The large number of Interims in proportion to the number of certificates issued, is accounted for by the fact that there was a great percentage of the stallions requiring inspection this year, and these permits were issued to protect the owners until the above requirement had been fulfilled. The inspectors covered a great deal of territory this season, and have turned in a large number of reports which were considered and discussed at a meeting of the Board held December 27th, 1922.

The enrolment of pure bred stallions has fallen off only slightly, in spite of the very general depression in horse breeding in the province.

The following figures are a summary of the enrolments for the year 1922.

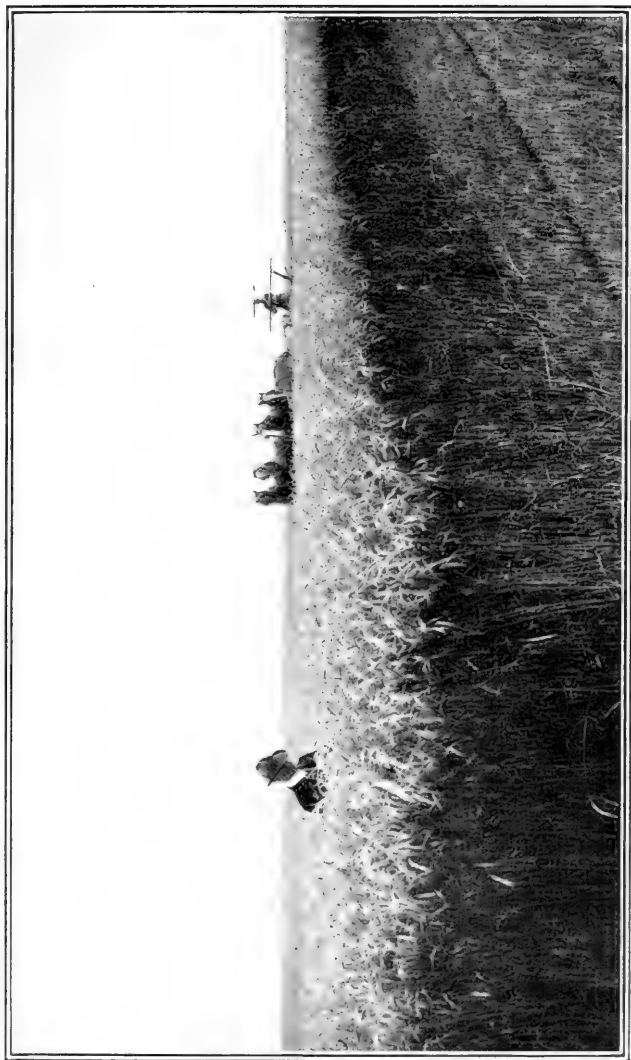
	Enrolments	Permits	Total
Percheron.....	229	233	462
Clydesdale	201	162	363
Belgian	72	54	126
Shire	15	16	31
Suffolk	5	3	8
Standard-bred	4	6	10
Thoroughbred	4	3	7
American Saddle.....	..	1	1
Hackney.....	1	..	1
French Coach .....	..	1	1
Grades	37	35	72

Grand Total ... 1,802

Respectfully submitted,

P. R. TALBOT,

Provincial Veterinarian.



FALL RYE ON SUMMERFALLOW, 40 BUSHELS TO THE ACRE
Scene taken at Claresholm Agricultural School, Claresholm, Alberta, 1922

Report of the Field Crops Commissioner

H. A. CRAIG,

Deputy Minister of Agriculture.

SIR,—

I have the honour to submit herewith the annual report of the Field Crops Branch for the year 1922.

The work of this branch for the year 1922 consisted of the supervision of weed inspection work, field crop competitions, combined seed crop and cleaned seed competitions, good farms competitions, local seed fairs, inspection of fields of grain eligible for registration, plowing matches, the operation of a government central cleaning and grading plant for the handling of registered seed and the securing of markets for Alberta seed. The provincial seed fair is operated under this branch also.

NOXIOUS WEEDS INSPECTION

During the year 1922 twenty-one local weed inspectors were appointed. This branch endeavoured to secure men for appointment as weed inspectors who were thoroughly versed in all lines of agriculture and therefore able to offer practical suggestions on farming to farmers requiring their help. The policy of trying to educate the public on modern methods of weed eradication was pursued with better results than simply requiring the inspectors to act as police to enforce the Noxious Weeds Act. Only one prosecution was found necessary in 1922. Farmers in every instance showed that they were willing to co-operate with their local weed inspector.

A divisional superintendent was kept constantly on the road to check up on the work of each weed inspector and to assist him in his duties. Meetings were organized amongst the farmers to discuss better methods of cultivation, rotation of crops, etc., with the object of keeping weeds in control. These meetings, for the most part, were well attended and much enthusiasm shown.

A weed inspectors' convention was held at Claresholm and also at Olds for the purpose of unifying the work and instructing each inspector. To these conventions the municipal weed inspectors were also invited but we are sorry to report that at Claresholm only one municipal weed inspector attended and at Olds six. It would appear that the municipalities would have been well advised to have had their inspectors at these conventions, as much valuable information was obtained.

This branch is pleased to report that the cities of Alberta have co-operated with the department much better than in previous years, to keep the weeds in control. Considerable improvement,

however, can be made yet in these larger centres. The railway companies also have done considerable work in 1922 to clean up grades and rights-of-way. With the same amount of effort continued in succeeding years the railroads should prove of less menace to the country as weed distributors than in the past. Irrigation companies did some very good work in cleaning irrigation ditches but there is still room for much improvement.

One feature by way of change in the enforcement of the Noxious Weeds Act was that for the most part weed inspectors were appointed who were strangers in the district where they worked. Better pay was offered these men and they were required to work every day and to have no other occupation while engaged as weed inspectors. They were kept on for a period of three months.

During the threshing period three inspectors were retained to check up on threshermen to see that they were complying with the regulations as specified in the Noxious Weeds Act. Although this work was not conducted extensively enough to cover every district in the province much valuable information was gathered. It was discovered that threshermen are one of the greatest factors in spreading noxious weeds, from one farm to another.

PLOWING MATCHES

Plowing matches were held at Lacombe, Lamont, Rochester and Vermilion. Large crowds and much interest was manifested at these matches. The competitions were keenly contested and some very excellent plowing done. After each match addresses were given by the judges and others.

Professor MacGregor-Smith and Professor Cutler, of the College of Agriculture, were the judges at these matches.

FIELD CROPS COMPETITIONS

Field Crops and Good Farming Competitions were held at Lake Saskatoon, Sedgewick, Strome, Killam, and Wainwright.

At Lake Saskatoon there were forty-three good farms competitions and twenty-eight entries in field crops competitions. J. D. Foster of Edmonton, did the judging August 1st to August 5th.

At Sedgewick there were sixteen entries in standing field crops competition and six entries in good farming competition. Mr. F. S. Grisdale, principal of the School of Agriculture at Olds, did the judging August 10th, 11th and 12th.

At Strome-Killam there were twenty-four entries in standing field crops competition. Mr. F. S. Grisdale of Olds did the judging, August 8th and 9th.

At Wainwright there were fifty-seven entries in the standing field crop competition. J. D. Foster of Edmonton, acted as judge August 10th to 15th.

Several other societies had reported their intention of holding these competitions, but later advised that owing to unfavourable weather conditions they had decided to withdraw.

The above judges in every case reported keen interest and much enthusiasm.

LOCAL SEED FAIRS

Considering the unfavourable crop conditions in 1922 the number of seed fairs and the quality of the grains exhibited was very creditable.

The societies holding local fairs, with dates, and the names of the judges are as follows:

Lethbridge	Nov. 14-15	Prof. J. Murray and M. L. Freng
Oyen	Nov. 16	Prof. James Murray
Macleod	Dec. 1	H. McArthur
Chauvin	Dec. 2	B. J. Whitbread
Brooks	Dec. 5	
Sedgewick	Dec. 9	Prof. J. R. Fryer
Provost	Dec. 14	H. W. Scott
Colinton	Dec. 22	Gordon Fletcher
Lacombe	Dec. 27	W. J. Stephen
Leduc	Dec. 30	W. J. Stephen
Bowden	Jan. 5	F. S. Grisdale
Lousana	Jan. 5	W. J. Stephen
Lake Saskatoon	Jan. 6	W. D. Albright
Olds	Jan. 6	W. J. Stephen
Magrath	Jan. 10-11	M. L. Freng

PROVINCIAL SEED FAIR

The Provincial Seed Fair held at Edmonton, February 13th to 16th, 1922, was in point of number of entries and general excellence of the exhibits far ahead of any ever held in the province. Two hundred and sixty competitors entered with a total entry list of nearly 700. In the wheat classes a splendid showing was made, practically all the wheat shown being of very high quality. The same applies to the oats and barley classes, while grass seed, rye, clover and corn, had a number of very fine entries, the alfalfa being particularly good. The exhibit of potatoes while large in number was not at all of a high class, a few outstanding entries were on the list, but for the most part, the quality was poor. The entries came from almost all parts of the province. Lack of space prevented the most favourable arrangement of the exhibits but this could not be overcome. The competition for the best exhibits made by any Agricultural Society was fairly keen, and a few really fine collections were shown. The successful competitors were: 1st, Brooks Agricultural Society; 2nd, Bowden Agricultural Society; 3rd, High River Agricultural Society.

A particularly fine demonstration of the successful growing of all kinds of cereals, grasses, corn, potatoes, etc., on irrigated land, was made by the Brooks Agricultural Society under the able direction of Don H. Bark and Mr. Grafton of the above district. The total amount of prizes paid by the Department was \$2,307.00, besides \$50.00 special prizes paid by others.

GOVERNMENT'S METHOD FOR THE HANDLING AND MARKETING
OF REGISTERED SEED PRODUCED BY FARMERS
IN ALBERTA

The Field Crops Branch, in co-operation with the Field Husbandry Department of the College of Agriculture, University of Alberta, and the Seed and Weed Branch, Ottawa, has endeavoured to encourage the production of registered seed grain in Alberta and has established a system for the handling and marketing of the same. The College of Agriculture distributes specially selected seed to farmers organized in seed centres. The Field Crops Branch inspects, under the rules of the Canadian Seed Growers' Assn., the crops as they are growing in the field. Inspectors who assisted in this work were Professor Cutler, Professor Fryer, Mr. J. C. Hooper, Mr. Hector McArthur, Mr. O. S. Longman, Mr. B. J. Whitbread, Mr. E. H. Buckingham, Mr. F. S. Grisdale, Professor Newton, Mr. W. J. Stephen, Mr. H. W. Scott, Mr. R. H. Austin, Mr. Gordon Fletcher and also Mr. R. M. Scott. Special stress is laid on the importance of the field inspection. When the grain is threshed the farmer whose crop has passed the field inspection test and whose grain, in the opinion of the Secretary of the Canadian Seed Growers' Association, will register, may ship in sacks direct to the government's central cleaning and grading plant at Edmonton. The sacks may be obtained for this purpose from the Field Crops Branch. The freight on the same is paid at Edmonton by the government and charged against the final settlement to the farmer. Sixty-five per cent. of the commercial elevator price at time of receiving the shipment is advanced to the grower.

The grain when received at the plant is cleaned, graded, sacked, inspected by the Canadian Seed Growers' Association's inspector, given a registration number and sealed. A market is sought for this seed. In 1922 we have been successful in creating considerable interest in this registered seed in the United States, Eastern Canada, and to some extent in Europe. After the home market has been satisfied it is the intention to dispose of the balance of this grain outside.

CHICAGO EXHIBIT

The Field Crops Branch was responsible for the putting up of exhibits from Alberta to the International Hay and Grain Show, at Chicago, in November. These exhibits were also taken down by this branch and returned to the exhibitors. Transportation charges on these exhibits to Chicago were paid by the government.

The following prizes were won by Alberta exhibitors.

Field Peas

- 1st J. B. Hill, Lloydminster.
- 2nd W. O. Way & Son, Holdar.
- 3rd Mjr. H. Strange, Fenn.
- 4th J. W. Lucas, Cayley.

Wheat

- 2nd T. W. Meldrum, Raymond.
- 8th Mjr. H. Strange, Fenn.
- 10th Wilford Bros., Leduc.
- 11th N. Taitinger, Claresholm.
- 15th Wm. Wallace, Linfield.
- 20th A. Lougheed, Bowden.
- 22nd H. Fisher, Sedalia.

Oats

- 1st and Grand Championship, J. W. Biglands, Lacombe.
- 2nd J. W. Lucas, Cayley.
- 6th Nels Linden, Wetaskiwin.
- 7th Dr. Allen, Edmonton.
- 8th B. Berry, Bon Accord.
- 10th A. Lougheed, Bowden.
- 12th Jas. Smith, Wolf Creek.
- 13th Duke of Sutherland, Brooks.
- 14th Anderson Bros., Bittern Lake.
- 15th E. O. Boyd, Rife.
- 20th J. R. Lattersall, Vermilion.
- 21st A. Young, Roydale.
- 24th J. Berry, Bon Accord.

2-Rowed Barley

- 1st N. Taitinger, Claresholm.
- 5th Mjr. H. Strange, Fenn.

Fall Rye

- 1st J. W. Lucas, Cayley.
- 19th A. Lougheed, Bowden.

6-Rowed Barley

- 3rd P. K. Patten, Brooks.

Timothy Seed

- 8th A. Lougheed, Bowden.

Alfalfa Seed

- 2nd P. Garrow, Brooks.
- 3rd A. Garrow, Brooks.
- 6th McNaughton & Grafton, Brooks.
- 9th C. M. Johnson, Brooks.
- 10th D. Bark, Brooks.
- 13th G. R. Janes, Brooks.

Sweet Clover Seed

- 9th Bark & Baird.

CO-OPERATION WITH OTHER BRANCHES

It has been the aim of this branch to endeavour to co-operate with the other branches of the department. Much valuable assistance has been received by way of judging, speaking at meetings, etc., while in return members of this branch have attended and addressed numerous meetings in the interests of better farming.

Respectfully submitted,

W. J. STEPHEN,

Field Crops Commissioner.

Report of the Poultry Commissioner

H. A. CRAIG,

Deputy Minister of Agriculture.

SIR,—

I have the honour to submit herewith the report of the Poultry Branch for the year 1922.

THE EGG AND POULTRY MARKETING SERVICE

Edmonton Branch

GENERAL SITUATION

The production of both eggs and poultry in the province of Alberta has been considerably increased during the year 1922. This growth in production, together with our extended activities in the country more than trebled the volume handled by this branch of the service. Prices in general have been lower than the two previous years, this being necessary owing to a general slump in outside markets. In view of the steadily declining market the management has endeavoured to get the best possible price back to the producer through the elimination of excessive express and other transportation charges and through a general improvement in the efficiency of the service.

A large proportion of the egg stocks were shipped out of the province to Great Britain and Eastern Canada, thereby establishing a name for Alberta eggs in new fields. Seven cars of eggs were shipped out of the province by this branch.

The policy of extending our Canadian and British connections has been rigidly followed throughout the year along the following lines: (a) Inducement through grading and paying graded prices to the farmer to produce high quality; (b) Careful packing and grading in accordance with requirements outlined by prospective buyers and (c) Concentration on transportation facilities, effecting improvements and reductions wherever possible.

CO-OPERATIVE SHIPPING OF LIVE POULTRY

The co-operative shipping of live poultry in carload lots to the Marketing Service proved very successful, notwithstanding the fact that regular poultry cars such as are used in the East and the States were not available. The movement is one of several initiated by the Marketing Service and which has given decided satisfaction to the producers throughout the country. The chief reason for this being the great saving to the farmer in transportation charges. The loss on these carload shipments has been light, and the shrinkage fairly normal, in all instances. The average capacity load for a stock car fitted with decks or crates is 11,000 lbs. net live weight, whereas had regular poultry cars been obtainable this could have

been increased to 17,000 lbs. with better facilities for feeding and cleaning in transit.

The following is a list of carload shipments received and the approximate saving per hundred pounds net weight to the producer for transportation when freight rates are compared with express rates:

Point of Shipment	No. of Cars	Net Gain to Farmer for Transportation
Provost.....	3	\$2.00 per cwt.
Berwyn.....	2	5.22 per cwt.
Monitor.....	3	1.44 per cwt.
Consort.....	1	1.44 per cwt.
Vermilion.....	3	1.00 per cwt.
Islay.....	1	1.00 per cwt.
Spirit River.....	1	4.62 per cwt.
Three Hills.....	1	2.62 per cwt.

15 cars.

OUT-GOING SHIPMENTS OF POULTRY

One car of live poultry was shipped to Montreal, and considering the lack of proper equipment this shipment was quite successful. This was the first shipment of live poultry attempted from Edmonton to Montreal, and has proven the possibilities that lie in this direction. Five cars of live poultry were shipped to British Columbia, and enquiries are to hand for more until well into the spring. One car of dressed turkeys (27,000 lbs.) was shipped to Eastern Canada, and two cars of mixed dressed poultry moved west to Vancouver during December.

These shipments of live poultry have been made in ordinary stock cars decked by ourselves for carrying poultry. With regular poultry cars available, providing better facilities and a greater carrying capacity, it would seem advisable to develop this branch of the business to the maximum. The various railroad officials have signified their intention to render all the assistance in their power to stimulate and encourage this live poultry movement. The shrinkage in car lot movements to the coast has been much less than was anticipated.

It has always been the opinion of the majority of produce dealers that the shrinkage and loss on car lot shipments would be heavy and would more than counteract any gain in prices, but this theory has been proven incorrect.

STOCKS

The stocks carried by the Marketing Service at December 31st, were comparatively light when compared with the volume handled. The egg stocks amounted to 492 cases of all grades. Of this stock on hand one car of seconds was shipped east on January 11th, and the balance was consumed by local trade by January 16th, 1923. The poultry stocks at the end of the year amounted to 60,000 lbs.

PRICES PAID TO FARMERS

Although the general trend of all commercial prices has been downward during the year 1922, the Marketing Service has at all times paid the farmer the best possible price prevailing. In view of constant fluctuations in the markets it has been impossible to guarantee prices for any definite period, but patrons have always been advised of any change by circular a few days beforehand. The average prices paid on a monthly basis are as tabled below:

EGGS

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Extras. . .	53	42	30	27	27	26	25	25	27	32	35	45
Ones	48	37	25½	23	23	20½	20	18	22	27	31	40
Twos	38	22	20½	19	19	15½	15	13	15	18	22	25

Prices all quoted f.o.b. Edmonton.

POULTRY

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Springers	12	14	14	14			20	14	12	12	12	11
Fowl	11	13	13	13	..	..	10	10	10	10	10	9
Turkeys	25	25	25	25	..	..	..	..	..	18	18	23
Ducks	14	14	14	14	..	..	..	..	..	13	13	14
Geese	14	14	14	14	..	..	..	..	..	13	13	14

The above prices are live weight f.o.b. Edmonton.

QUALITY

There is evidently a great deal yet to be done in the way of inducing farmers to improve in the quality of eggs marketed. The grading results for the year in percentages were as follows: Extras 11.3, Firsts 52.3, Seconds 29, Cracks 3.4, Broken 2, Rots 2.

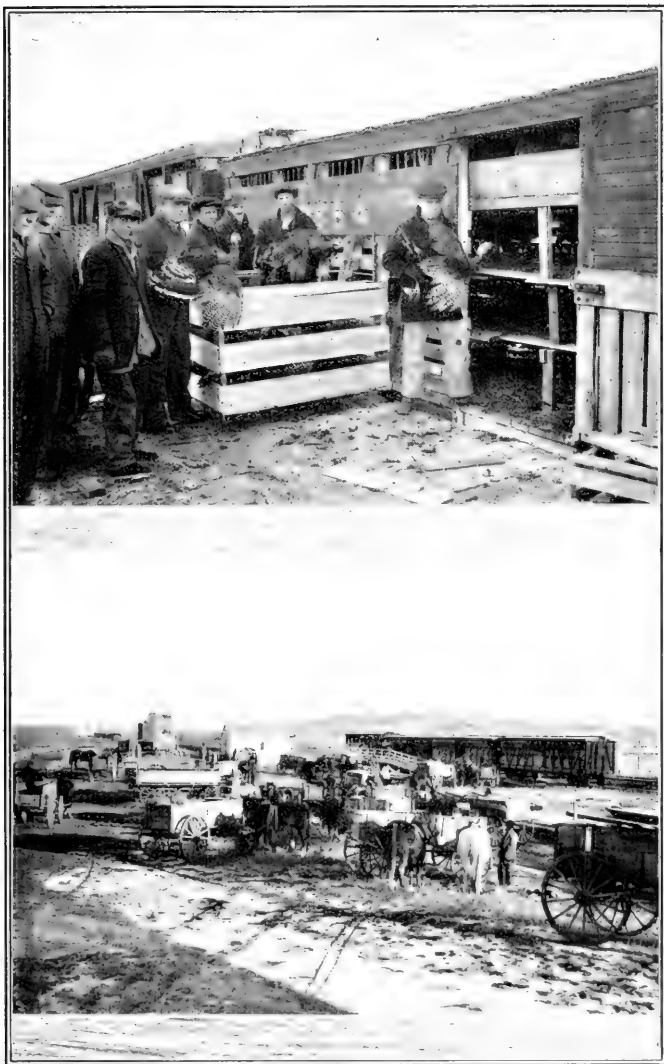
THE EGG AND POULTRY MARKETING SERVICE

Calgary Branch

Egg shipments received by this branch of the service increased over 100% during the past season, some 205,830 dozen being handled as compared with 99,835 dozen for the previous season. There has been a marked increase in direct shipments from individual farmers, 417 shipping regularly this season as compared with 227 last season. In addition there were 455 farmers belonging to 36 Egg Circles who were regular shippers to the service. Still other farmers availed themselves of the service through 13 country merchants with whom we had a signed agreement covering their obligation to return a graded price to the producer. This was the first year for this arrangement and the results are of so satisfactory a nature as to warrant its extension where interested store-keepers can be found.

The Marketing Service is becoming widely known as is evidenced by the fact that farmers at the following 158 points in this part of the province utilized the service as a marketing outlet for eggs and poultry:

COMMUNITY SHIPMENT OF TURKEYS



Above pictures show farmers of the Monitor District, making a Community shipment of Turkeys to the Alberta Government Poultry Marketing Plant at Edmonton.

Airdrie	Cavendish	Huxley	Parr
Acme	Condor	High River	Penhold
Aldersyde	Compeer	Halkirk	Pollockville
Altario	Consort	Haynes	Pincher
Ardley	Coaldale	Innisfail	Pemukan
Alderson	Castor	Irvine	Pandora
Alsask, Sask.	Cassils	Kirkcaldy	Patricia
Alhambra	Claresholm	Kirriemuir	Pincher Creek
Brocket	Cluny	Lacombe	Rosebud
Barons	Crowfoot	Lanfine	Rainier
Brant	Carstairs	Lomond	Raven
Benton	Cessford	Lathom	Richdale
Bow Island	Duchess	Lousana	Rosemary
Blackfalds	Drumheller	Langdon	Red Deer
Baintree	De Winton	Loyalist	Retlaw
Black Diamond	Dalemead	Macleod	Rose Lynn
Bentley	Doreenlee	Kitscoty	Stavely
Bowden	Didsbury	Mazeppa	Sheerness
Bowell	Delia	Morrin	Strathmore
Bassano	Dunstable	Milk River	Stanmore
Botha	Duhamel	Makepeace	Seven Persons
Beiseker	Etzikom	Majorville	Sylvan Lake
Bindloss	Excel	Milo	Sibbald
Big Valley	Erskine	Michichi	Swalwell
Benalto	Eckville	Monitor	Stettler
Brooks	Enchant	Manyberries	Standard
Blackie	Elnora	Morningside	Scotfield
Bow Slope	Ensign	Medicine Hat	Suffield
Cereal	Fleet	Millicent	Throne
Coronation	Foremost	Nanton	Tudor
Chinook	Ferintosh	Nobleford	Three Hills
Carseland	Gadsby	Nemiskam	Trochu
Cayley	Gleichen	Ouelletteville	Veteran
Carmangay	Gem	Orion	Vulcan
Cheadle	Hilda	Oven	Winnifred
Cochrane	Hutton	Okotoks	Youngstown
Craigmyle	Hussar	Provost	Zetland
Champion	Hanna	Parkland	

COMMUNITY KILLING OF TURKEYS

The results of the community killing of turkeys organized this year proved popular with turkey raisers in the southern part of the province, the Calgary branch of the E.P.M.S. being called upon to market three times the quantity, the comparison being for 1921 when approximately 45,000 pounds were sold, while this season nearly 128,000 pounds were sold. Approximately 500 turkey raisers in five districts contributed to the five carloads shipped. Application was made from at least five other points to have the service extended to them, but these points were not sufficiently organized to avail themselves of our offer to handle their stocks if they could be made ready for shipment by December 9th. Splendid organization was carried out at nearly all the points of shipment, the bulk of the turkeys being killed and dressed by the farmers and brought to the collecting points for grading and packing.

The turkey industry in southern Alberta has more than doubled in the past two years owing to the encouraging prices realized but it is becoming more and more evident that if we are to retain our place upon the eastern markets our farmers must produce a more highly finished product. Every effort is being made by the Marketing Service to study the requirements of the

various markets and grade and pack in such a way as to satisfy these markets. In this project as in all the work of the Egg and Poultry Marketing Service the poultry branch has had the hearty co-operation of the Dominion poultry representative and his assistants.

VOLUME OF BUSINESS

Eggs

Edmonton Branch	230,000 doz.
Calgary Branch	205,000 doz.
	<hr/>
	435,000 doz.

This is equivalent to 14,500 cases or 29 car loads.

Poultry

Edmonton Branch	354,000 lbs. live weight
Calgary Branch	203,000 lbs. live weight
	<hr/>
	557,000 lbs. live weight.

This is equivalent to 37 car load lots figuring 15,000 lbs. to the car-load.

The volume for 1921 was approximately 177,000 dozen of eggs and 200,000 lbs. of poultry. The 1922 statements show an increase of 145% in eggs and 178% in poultry.

PROVINCIAL POULTRY PLANT

On December 31st we had in stock 867 birds of all breeds made up as follows: Barred Rocks 236, White Wyandottes 235, Rose Comb Reds 66, Single Comb Reds 31, Buff Orpingtons 140, Single Comb White Leghorns 142, and Rose Comb White Leghorns 17. Of these 751 were females of which greater proportion will serve as breeders for 1923. This statement shows a much greater number of females than ordinarily are carried, the purpose being to extend our operations and hatch an increased number of chicks for the enlarged plant at Oliver.

SALES OF EGGS AND BREEDING STOCK

During the year the poultry plant distributed eggs, day-old chicks, male birds and some breeding females to farmers throughout the province. The practice in this regard has been to limit the orders so as to give assistance to as many farmers as possible. Residents of the province have had the option of purchasing 3 settings of eggs, 2 cockerels or 25 day-old chicks. There were sold during the year 4,724 eggs for hatching, 2,496 day-old chicks, 148 breeding males and 36 females.

LAYING CONTESTS

In October, 1921, ten of our best White Wyandotte pullets were selected for entry in the Lethbridge Laying Contest. This contest extended over a period of 12 months, November 1st, 1921,

to October 31st, 1922. Our pen of ten birds laid 1,615 eggs in the 52 weeks, an average of 161 eggs per bird and was the leading pen in the Wyandotte class.

A pen of Barred Rocks was entered in the Canadian Egg Laying Contest at Ottawa which covered the same period, November 1, 1921, to October 31st, 1922. These ten birds laid 1,644 eggs, the individual records being 235, 219, 209, 185, 163, 152, 140, 121, 118, 102,

PONOKA POULTRY PLANT

A beginning was made in the spring of 1922 toward the establishment of a commercial poultry farm on the Mental Hospital Farm at Ponoka. An ideal location was chosen and forty acres of the farm set aside for this purpose. A number of buildings were erected, equipment secured, and in the month of May, 1,000 day-old chicks were purchased with which to establish a flock. In December after male birds and unsuitable stock had been disposed of the flock consisted of 410 pullets. The stock was well grown and in the latter part of December had reached approximately 40% production.

EGG INSPECTION

In the enforcement of The Act Respecting the Purchase and Sale of Eggs three hundred and eighty merchants were visited and their work inspected and of this number one hundred and forty were visited a second time.

In general the attitude of the merchants towards the Act was one of compliance but this compliance was very poorly supported by the slipshod methods they had adopted to obey the regulations. This was particularly the case among non-English-speaking storekeepers and in non-English-speaking districts. Merchants were seldom antagonistic towards the Act although some attempts at evasion were made. A lack of understanding of the intention of the Act was usually the reason for whatever antagonism was displayed.

It was not generally realized that full co-operation on the part of all egg handlers in obeying the law would inevitably result in placing the Alberta egg on a very high plane as regards quality. Once convinced of the merits of the Act and of the work it would accomplish in the interests of quality, merchants generally entered into the heartiest co-operation and to a greatly increased extent made quality the governing factor in their purchases.

Originally the greatest difficulty encountered in the enforcement of the Act was the lack of knowledge of candling and inability to detect unwholesome eggs. In every such case the inspector gave instructions in candling and in the method of setting up a candling apparatus.

The improved methods of handling eggs observed among those merchants who were revisited was highly satisfactory. On several occasions merchants themselves arranged jointly with the producers of their district to attend demonstrations of candling which

the inspector was invited to give. The inspector availed himself of these opportunities and every occasion which offered to show that the only way of either buying or selling eggs was to do so on a basis of quality. A great improvement in quality has undoubtedly already been effected all over the province but there is still a tremendous amount of leeway to be made up which calls for unremitting work along every avenue which will help directly or indirectly to improve the industry.

A small percentage of merchants made no attempt to obey the law. These were duly warned and their stocks inspected. Three prosecutions were undertaken and in two of these convictions under the Act were obtained.

Respectfully submitted,

J. H. HARE,

Poultry Commissioner.

Report of the Director of Demonstration Farms

H. A. CRAIG

Deputy Minister of Agriculture.

SIR,—

I have the honour to submit herewith the annual report of the Provincial Demonstration Farms.

The crop of 1922 on the provincial farms, owing to the severe climatic conditions, was a very light one. With the lack of reserve moisture in the land from the previous year, and again the absence of spring rains, during the growing season, the land made a good seedbed, but without the necessary moisture, it was impossible for the young plants to withstand the severe drought, and the dry, hot winds soon began to tell on the crop. In some cases we had to turn the stock in, to pasture same, as this grain was too short to cut.

In some of the southern districts, where showers of rain came at intervals during the growing season, the crops did exceedingly well. The farms at Claresholm, Raymond and Gleichen had a very good yield; especially at Claresholm where the yield of wheat, oats and barley was heavy.

Most of the crops in the northern districts, where crop failure was unknown before, were failures. This may be said of Stony Plain, Athabasca and the Olds farms, lack of moisture being something unusual in these districts. This being the case, our crop was a very light one, with the exception of sweet clover and sunflower, which gave a fair average yield. The timothy was a complete failure in these districts. Some of our fields that, with moisture, would produce from one and a half to two tons per acre in normal years, had to be plowed up, leaving us without any meadows for another year. This greatly interfered with our crop rotation.

The Sedgewick farm, where local showers favoured the locality, during the growing season, had a fair yield of wheat, oats, barley and hay.

The Vermilion farm, where the germination was good at the beginning, was visited by a heavy frost in the early part of June, retarding the growth to a great extent, which with the lack of moisture, made our harvest a very light one.

At the Youngstown farm, the crop was almost a complete failure. On summerfallow land the wheat yield was from four to six bushels per acre. Other crops, including oats, barley, corn and sunflower were very light.

At the beginning of the year the Department of Agriculture took over the operation of the farm at the Ponoka Mental Hospital. Although the season was a very dry one, we had a fair yield of oats, barley and green feed on this farm. In former years wheat was included in the crop rotation. I have dispensed with this crop so that we are able to grow more feed that can be used for the production of milk, as this farm is devoted chiefly to dairying, and for the production of milk, potatoes, vegetables, pork, veal, poultry and eggs for the maintenance of the inmates of the hospital. In future I hope to be able to have some of this land seeded to tame grasses, and to have more of the land broken and brought under cultivation, as there is still a large area of the land unbroken. During the past season I had about forty acres broken, and hope to have a much larger acreage broken this year, so as to be able to use the tame grasses for pasture, as a larger number of cows can be maintained on tame grasses, on a smaller acreage, than can be on wild grass.

Fall Rye

Fall rye has been grown successfully on all of our farms for a number of years as a means of fall pasture, and again in the early spring before the tame grasses are ready for use. On several of our farms during the past season this crop was badly winter-killed; the difficulty being the lack of snow to protect the young plants during the severe weather. It is somewhat unusual to have to report a failure of this crop, as we can almost entirely depend upon a crop of rye. It is used in many different ways—for pasture, hay, and threshed grain that will give good profit if used for that entirely. We have, at the present time, one group of steers on experiment to determine the feeding value of rye hay as compared with other roughages.

Corn Crop

This crop did exceptionally well at the Raymond and Claresholm farms during the past season. At the latter place, the average was about fifteen tons per acre, making a very creditable showing for the season. At most of the other farms where this crop was grown, it also was affected by the very dry season, and was a very light crop. In preparing the land for corn, it must be plowed deeply and given a thorough cultivation to warm up the ground before planting. It should not be planted until the weather is warm, so that germination will take place immediately. Corn should be planted in hills so that it can be cultivated each way to conserve the moisture and promote growth.

Alfalfa

This crop is not grown in very large acreages on any of the farms, with the exception of Raymond and Gleichen, where, with the aid of water, this clover does exceedingly well. During the past season when dry farming operations were carried on, the severe drought hampered the growth of the crop.

Sweet Clover

This crop was introduced in large acreages, two years ago. Before that time there were only small plots grown. During the past season we had, at several of the farms, a good yield of this clover. It seemed to stand the severe drought much better than some of the other grasses. At Claresholm farm, where we had ten acres, this did very well. The two cuttings made an average of three tons per acre. We have twenty acres seeded for next year. We also have a group of steers on experiment, with sweet clover as a roughage to determine its feeding value, as compared with other roughages. With the inoculation of this clover in the land, it will be much easier to get some of the other varieties in the soil.

Rape

This is a crop that can be depended on, and can be grown successfully in almost any district, if the soil is properly prepared, and the rape sown in rows, from 28 to 30 inches apart, so that it can be cultivated between the rows; this helps to promote growth and conserve moisture, and when pasturing same there will not be so much waste from the stock, as they can walk between the rows. It is my intention to have larger acreages sown on all of our farms this season for pasture in the fall, when other grasses are nearly exhausted. It cannot be prized too highly for finishing lambs for fall market. With a small grain ration added, it is also useful for pigs and young stock, putting them in the best possible condition for winter quarters.

Turnips

The turnip crop was a total failure on all of the farms during the past season.

Sunflowers

This crop did not give as heavy a yield per acre as previous years, but in some districts we had a fair yield. The dry, hot winds seemed to check the growth, but with the late frosts in the fall, it was possible for the sunflower to come nearer to maturity, making a better quality of ensilage (we have sunflower silage at all of the farms). At Ponoka farm the first silo was filled with cut sunflower, and we found that a large quantity of the juice ran out of the silo. In the other, we put oat straw in the bottom then a layer of sunflower and another layer of cut oat straw. This method seemed to hold the juice. When this silo comes into use we shall be able to determine whether the straw soaked in. The juice would produce as much milk as the pure sunflower silage. Last fall we had trench silos dug at Claresholm, Raymond, Gleichen and Olds farms, and with one at Athabasca that was in use the previous winter, we now have five in all, filled with corn and sunflower silage, with the exception of the one at Olds. This silo is filled with cut green oats.

Steer Feeding

We are carrying on experiments at these farms with one hundred commercial steers. These are divided into groups of five—each group under a different experiment. The object in view is to determine the feeding value of the different kinds of roughages, and also the different kinds of silage, with a standard grain ration of two-thirds barley and one-third oats to each group.

At the Gleichen farm we have eighty-five commercial lambs on experiment, in groups of seventeen. Each group is on a different experiment. This experiment is also to determine the feeding value of the different kinds of roughages; some with ensilage added; some with roots; others with ration of alfalfa hay, greenfeed and cut straw, with a grain ration, in each case, of ground oats. The main purpose of this experiment is to obtain the best results of finishing lambs for the market.

On December 24th, 1921, we purchased sixteen steers at the Edmonton stockyards, and sold them on April 28th, 1922, in the same yards. The purpose of feeding was to demonstrate to the people of the district the possibility of feeding steers profitably on feeds grown in the district. The following is a statement which shows the profit made on the feeding of these steers:

To purchase of 16 steers, 17,230 lbs. (Edmonton Weight), at \$41.50 per 100 lbs.	\$775.35	
Yardage Commission and Brand Inspection	42.00	
Freight, Edmonton to Athabasca	29.75	
	<hr/>	\$ 867.10

Feed

508 bus. Oats at 30¢ per bus.	152.40
234 bus. Barley at 40¢ per bus.	93.60
9½ tons Green Feed at \$9.00 per ton	85.50
27 tons Ensilage at \$3.00 per ton	81.00
50 lbs. Salt	2.00
Total Cost of Feed	<hr/> 414.50

Labour

Labour	40.00
Total Cost of Feed and Labour	<hr/> 454.50

Selling Expenses

Freight, Athabasca to Edmonton	38.75
Yardage Commission and Brand Inspection	38.70
Total Selling Expense	<hr/> 77.45
	<hr/> \$1,399.65

By Price realized, 21,700 lbs. (Edmonton weight),
at \$7.25 per 100 lbs. \$1573.25

Net Profit—

Average \$10.89 per head \$174.20

Gain in Weight, 4,470 lbs.

Steers purchased 24th December, 1921.

Steers sold 28th April, 1922.

This includes the total cost of the steers from the time of purchase until sold. It will be noted that the profit was a fair one, practically \$11.00 per head. This profit was made possible by the heavy gains and the spread of $2\frac{3}{4}$ c per lb. between the buying and selling. I should like to add that the ensilage fed from our trench silo was of the very highest quality, and can attribute the large gain to that, as the silage was in the best possible condition. In the trench silo during the very severe weather there is no danger of freezing, whereas with the upright silos, it is impossible to keep the silage in the same condition for feeding.

The following table will give a statement of the individual weight of the steers fed inside versus outside, when arriving at Athabasca, and when leaving to be sold:

	Weight when purchased, Dec. 24, 1921.	Weight when sold, April 28, 1922.	Gain
	lbs.	lbs.	lbs.
Fed Inside:			
No. 1	1020	1350	370
No. 2	940	1310	370
No. 3	1170	1540	370
No. 4	920	1240	320
No. 5	1030	1460	430
No. 6	1020	1330	310
No. 7	960	1450	490
No. 8	930	1270	340
Fed Outside:			
No. 9	1050	1370	320
No. 10	1020	1400	380
No. 11	900	1260	360
No. 12	1000	1270	270
No. 13	980	1350	370
No. 14	1025	1340	315
No. 15	1040	1540	500
No. 16	1060	1480	420

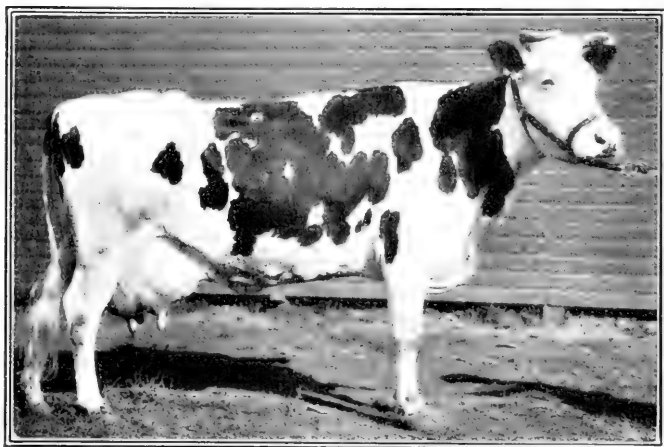
With the different experiments that we are carrying on during this winter, we hope to be able to obtain some valuable information at the close of the season.

Livestock

All of the herds on the different farms did very well during the past season. We had no cases of contagious diseases. The production of young stock was satisfactory. During the past summer the herds were reduced to a limited number to make it possible to include a number of commercial steers to be fed on the different experiments at each farm. We have a number of pure-bred steers of our own breeding. Some of these are from our best cows. As this is something we are endeavoring to try as an experiment, we had the good fortune to have one of these animals compete at the Fat Stock Shows in Toronto, Chicago and Guelph, as a junior yearling. The winnings of this steer were: Second at Toronto, eighth at Chicago, and second at Guelph, in classes of

strong competition, making a very creditable showing. This steer was sired by our herd bull, Village Cornerstone and his dam was Broadbrook's Sweetheart.

The purebred herd of Holsteins at the Stony Plain farm was transferred to the farm at Oliver a few months ago. Following is the record of some of these cows, before leaving the Stony Plain farm. Camille Abberkirk Korndyke (32602), a seven-year-old cow, recently completed a 365-day test, under the Dominion R.O.P.



CHAMPION HOLSTEIN OF WESTERN CANADA

"Camille Abberkirk Korndyke," 32602, seven years old. Owned by Alberta Department of Agriculture. In 365-day test, gave 25,890.1 lbs. milk, 1,132.5 lbs. butter.

test, making a record of 25,890.1 lbs. of milk and 1,132.5 lbs. of butter. This record makes her the champion cow in the prairie provinces. The following table will show a few of the other Holstein cows' records:

	Lbs. Milk.	Butter Fat.	Milk Days
Aliene Mech. Korndyke	16860.2	674 5	265
Hengerveld Pearl Nephel	15830 1	650 8	244
Lillian Wayne	12090 9	466 3	234
Hilda Burnside Korndyke	12861.2	412 5	275
Vronka Mercedes	11988 8	427 2	273
Daisy Alcartra Segis	10535.7	420 4	158
Lady Pontiac Ormsby	8898 9	308 2	174
Lady Ormsby Boanerges	7535 8	255 7	199

The table below will show a few of our Dual Purpose Short-horns herds' records, at the Vermilion farm. As most of these cows were imported a little over a year ago, it can hardly be

expected that the production of these animals will be high, owing to the long voyage, and the dry season following their landing here. There are several of these heifers with their first calves, which makes a very creditable record:

	Lbs. Milk.	Butter Fat.	Milk Days.
Rose of Crookdale	8039.9	341.7	301
Barrington Duchess, 31	6522.8	281.8	291
Cherry Blossom	5497.7	247.1	250
Golden Princess	4992.9	219.6	247
Graceful Lily	4062.9	1160.2	184

Respectfully submitted,

D. DOUGLAS,

Farm Director.

Report of the Superintendent of Fairs and Institutes

H. A. CRAIG,

Deputy Minister of Agriculture.

Sir,—

I have the honour to submit herewith the report of the Superintendent of Fairs and Institutes for the year 1922.

EXHIBITIONS AND FAIRS

Ninety-six fairs were held in Alberta during 1922—this being twelve fewer than the previous year. Owing to unfavourable crop conditions in certain sections no fewer than sixteen agricultural societies which had been assigned dates cancelled their fairs, rather than run the risk of losing money by holding fairs under adverse conditions.

The exhibit of livestock was about the same as usual in regard to both numbers and quality; the fairs in the southern part of the province, on account of improved climatic conditions were somewhat better and the interest greater than in previous years.

The leading features at last season's fairs were the excellent condition in which most of the animals appeared, the magnificent display of grains and vegetables at nearly all places and particularly at the September fairs, and the somewhat slimmer attendance than usual of the public, on account doubtless of the hard times and scarcity of money. Visitors from Ontario and other points at a distance were not slow in expressing their surprise and admiration at the wonderful exhibits of potatoes, turnips, carrots and other roots, as well as the high quality of the grains and grasses. The writer has travelled a good deal over the greater part of this continent and he cannot recall seeing finer roots and vegetables at any point in North America than what were on exhibit at a good few of the Alberta fairs this last season. The competition in nearly every case was exceedingly keen and therefore the work of the various judges was by no means a sinecure. No fewer than 62 judges were employed in the livestock section alone, and the general approval which their awards received was equally remarkable and gratifying. Score cards were used by all the judges for the first time, the object being to ascertain which fairs were doing good beneficial work and which ones were simply "resting on their ears." Some of the latter kind are in danger of having their charters cancelled by the government in the near future and their operations brought to a standstill. On the whole, however, the fairs of 1922 were quite as successful as could be expected.

On the recommendation of the Minister of Agriculture, a committee from the Alberta Agricultural Fairs Association was appointed to draw up a revised prize list and set of standard rules—the main object being to bring about a substantial reduction in the total amount paid for prizes annually. This committee classified all the fairs as C, D and E classes—leaving out of consideration the A circuit exhibitions at Calgary and Edmonton and also the B circuit fairs at Camrose, Red Deer and Lloydminster. Fourteen fairs were put in C class, 37 fairs in D class and 59 fairs in E class. Each of these classes had a limit put on the amount they were allowed to offer as a first prize in the various sections of livestock. The result of this restriction is a saving of approximately \$30,000 in government grants this year, which is a “consummation devoutly to be wished” in these days.

Weather.—While the weather for the most part was good, quite a few of the fairs, 18 in number, suffered more or less from rain during the fair day or part of the day. This naturally affected the attendance unfavourably to some extent, but was beneficial to the country.

EDUCATIONAL AND EXTENSION WORK

As usual a large number of short course schools and institute meetings were held during the past year. A special Mixed Farming Train was equipped by the Canadian Pacific Railway Company and toured a large part of the province, including the following points: Acme, Irricana, Okotoks, High River, Nanton, Vulcan, Blackie, Alix, Stettler, Castor, Coronation, Camrose, Stronie, Sedgewick, Hardisty, Czar, Provost, Busby, Westlock, High Prairie, Falher, Spirit River, Sexsmith, Grande Prairie, Donnelly, Peace River and Berwyn. The total attendance at these meetings was over 13,000 and the average attendance 493.

The speakers at these meetings were S. G. Carlyle, Livestock Commissioner, who was in charge of the train; G. B. Williams, representing the Canadian Pacific Railway; Dean Howes, Prof. Dowell, Prof. Latimer, Dr. Morrison, S. C. Freeborn, H. S. Pearson and G. F. Herbert. A. W. Foley operated the moving pictures which as usual were much appreciated. The subjects discussed included dairying in all its branches, swine raising featuring especially the bacon type of hog. Sheep, silos and the different kinds of silage also received due consideration, and all the subjects proved of much interest to the various communities.

Institute meetings with lectures and pictures of livestock, dairying, etc., were held by Geo. W. Scott and Alex. Galbraith at Onoway, Rimbey, Nugent, etc. Meetings with special reference to irrigation were held by James Murray and M. L. Freng at Foremost, Etzikom, Pakowki, Manyberries, Milk River, Warner, Stirling, Raymond, Magrath, Cardston, Pincher Creek, Macleod, Grassy Lake, Bow Island, Winnifred, Seven Persons, Suffield, Retlaw, Enchant, Travers, Lomond, Empress, Bindloss, Cavendish, Atlee, Jenner and Patricia.

Poultry meetings were held last winter and spring at the following places—Mr. Hare and Mr. Shackleton being in charge:

Blackie	Munson	Innisfail
Vulcan	Craigmyle	Red Deer
Champion	Hanna	Coronation
Carmangay	Crossfield	Veteran
Barons	Carstairs	Consort
Rockyford	Didsbury	Monitor
Gadsby	(Richdale cancelled on account of weather).	

All were well attended and apparently appreciated.

Change in Ordinance.—The only change in the Agricultural Societies Ordinance is a reduction in the minimum amount necessary for an agricultural society to pay out in order to earn a government grant. The amount previously was \$500 and this has been reduced to \$300.

Poultry Shows.—Winter exhibitions of poultry were held at Calgary, Edmonton, Lethbridge, Red Deer, Medicine Hat, Wetaskiwin, Vulcan, Taber, Provost, Sedgewick, and elsewhere. Much interest is being shown from year to year in poultry of the various utility breeds, and competition at the different shows has become increasingly keen.

Horticultural Exhibitions.—Were held successfully at Calgary, Edmonton, Red Deer, Camrose, Bellevue and Busby.

Calf, Lamb and Pig Competitions.—The usual boys' and girls' competitions for best fat calves, lambs and pigs were held both at Edmonton in spring and at Calgary in November at the Winter Fair. It was the general opinion that the average quality was better and the competition keener than ever. At Edmonton there was paid out to the boys and girls as prizes—\$793 for beef calves, \$295 for dairy calves, \$345 for pigs, and \$61 for lambs, making a total of \$1,494. At Calgary Winter Fair there were 38 contestants in the Baby Beef Competition and \$862.50 paid in prize money. In the Lamb Competition there were 32 contestants and \$321.50 paid out. In Pig Feeding Competition there were no fewer than 84 entries for \$555 prize money. For the Pig Club carloads three contestants got \$250 in prizes and in the Swine Judging Competition with 17 contestants, \$289 was distributed—being a total of \$2,278. Intense interest was manifested by young and old throughout the judging of these juvenile classes and the opinion seemed to be unanimous that these are about the most important and beneficial competition classes of the whole year.

Toronto Royal Winter Fair.—This new fair held in November in the finest arena in North America proved a wonderful success and attracted exhibits from all over Canada as well as several of the Eastern States. The fat steers shown by the University of Alberta were very successful, winning amongst other honours the championship for Shorthorn steers of any age. The seed grain exhibits from Alberta farmers also came well to the front, adding fresh laurels to the province.

Chicago International Show.—At this annual exhibition of the best livestock and seed grain on the continent, Alberta asserted its superiority as usual. The University steers again won a number of honours in very strong competition—one of them a Galloway steer, raised at High River, winning the championship of the breed. In seed grain many of the very highest honours were won by Alberta in oats, barley, wheat, rye and peas. This exhibit not only proved valuable advertising but gave the people fresh proof of Alberta's unequalled standing as a grain producer of the very highest class.

Respectfully submitted,

A. GALBRAITH,

Superintendent.

LIST OF ALBERTA AGRICULTURAL SOCIETIES AND SECRETARIES FOR 1922, WITH DATES OF FAIRS

SOCIETY	DATE OF FAIR	SECRETARY	ADDRESS
Alix	Aug. 14-15	S. A. Andrews	Alix.
Bashaw	Aug. 9-10	A. J. Frank	Bashaw.
Berry Creek (Pandora)	Sept. 1	L. E. Helmer	Nateby.
Big Valley	Aug. 11-12	W. W. Bridge	Big Valley.
Bowden	Aug. 16	Mrs. W. A. Hills	Bowden.
Bow Valley (Bassano)	Sept. 12-13	E. A. Beck	Bassano.
Busby	Sept. 12-13	S. E. Hayward	Busby.
Bye-Moor (Hartshorn)	Aug. 10	Leonard Browne	Hartshorn.
Bear Lake	Aug. 18-19	H. L. Dundas	Bear Lake
Brooks	Sept. 14-15	D. H. Bark	Brooks.
Benalto	July 25-26	P. T. McKee	Benalto
Carmangay	Aug. 16-17	C. H. Messinger	Carmangay.
Castor	Aug. 11-12	A. H. Scheffler	Castor.
Chauvin	Aug. 3	P. H. Perry	Chauvin.
Chinook	July 27-28	W. A. Cruickshank	Chinook.
Claresholm	July 20-21	G. B. Walker	Claresholm.
Cochrane	Sept. 19-20	F. W. Maggs	Cochrane.
Colinton	Sept. 7	J. A. D. Robertson	Colinten.
Consort	Aug. 16-17	C. A. Fawcett	Consort.
Coronation	Aug. 10-11	T. N. Cuthbert	Coronation.
Crossfield	June 27-28	F. I. Batcheller	Crossfield.
Cardston	Aug. 11-12	W. H. Duce	Cardston.
Daysland	Aug. 11-12	N. A. Houghton	Daysland.
Deseret (Magrath)	Aug. 8-9	M. E. Ririe	Magrath.
Didsbury	Aug. 17-18	G. A. Wrigglesworth	Didsbury.
Donalda	Aug. 11-12	T. J. Presten	Donalda.
Durlingville and Bonnyville (Bonnyville)	Sept. 20	J. L. Dayten	Bonnyville.
Eastern Alberta (Provost)	Aug. 4	S. F. Burgess	Provost.
Edgerton	Aug. 1	J. Smalley	Edgerton.
Edson	Sept. 8	R. E. Therber	Edson.
Fort Saskatchewan	Aug. 7-8	H. W. Dodge	Fort Saskatchewan.
Gleichen	Sept. 21	F. L. Mallory	Gleichen.
Goose Creek (Lougheed)	Aug. 2	F. B. Mundy	Lougheed.
Grande Prairie	Aug. 11-12	W. H. Watts	Grande Prairie.
Granum	Aug. 1-2	P. S. Clark	Granum.
Griffin Creek	Aug. 21-22	O. B. Winterstein	Griffin Creek.
Greencourt	Aug. 22	N. E. Bressey	Greencourt.
Hanna	Aug. 8	S. G. Watt	Hanna.
Hays (Lousana)	Sept. 5-6	R. G. P. Cochran	Lousana.
Highland (Delia)	Aug. 15	Leslie Stephens	Delia.
High River	Aug. 11-12	J. A. Massey	High River.
Holden	Aug. 18	A. T. Stewart	Holden.
Innisfail	July 27-28	W. G. McArthur	Innisfail.
Innisfree	July 31-Aug. 1	W. J. Reid	Innisfree.
Irma	Aug. 16-17	J. W. Milburn	Irma.
Kitscoty	Aug. 18	T. H. Currie	Kitsety.
Lacombe	July 31-Aug. 1-2	Ino. McKenty	Lacombe.
Lake Saskatoon	Aug. 8-9	H. C. Cooper	Lake Saskatoon.
Lamont	Aug. 4	G. R. Stewart	Lament.
Langdon	Aug. 11	Walter Alcock	Langdon.
Leduc	Aug. 15-16	A. R. Ennis	Leduc.
Lloydminster	July 24-25-26	H. Huxley	Lloydminster.
Lomond	Aug. 2	W. H. Smith	Lomond.
Macleod	Aug. 3-4	R. J. E. Gardiner	Macleod.
Mid-Pembina (Dunstable)	Sept. 5	A. D. Gilmer	K. E., Box R.R.1, Busby.
Milnerton	Sept. 27	A. Hutchinson	Knee Hill Valley.
Medicine Hat	July 27-28-29	C. A. Richardson	Medicine Hat.
Mosside	Aug. 30	T. Richmond	Mosside.
Munson	Aug. 9	L. C. Jackson	Munson.

LIST OF ALBERTA AGRICULTURAL SOCIETIES AND SECRETARIES FOR 1922, WITH DATES OF FAIRS—*Continued*

SOCIETY	DATE OF FAIR	SECRETARY	ADDRESS
Nakamun and Sion	Sept. 7	J. B. Nixon	Sion.
Nanton	Aug. 9-10	Wm. Robertson	Nanton.
Okotoks	Aug. 15-16	E. A. Hayes	Okotoks.
Olds	July 25-26	R. B. Campbell	Olds.
Onoway	Aug. 23	A. A. Brown	Onoway.
Oyen	July 25-26	F. C. Bliss	Oyen.
Paddle River (Barrhead)	Aug. 31	Mrs. Pattie E. Sebern	Mellowdale.
Peace River	Aug. 16-17	H. E. Dunning	Peace River.
Plamondon	Sept. 5	Wm. Plamondon	Plamondon.
Ponoka	Aug. 22-23	L. I. Stuart	Ponoka.
Priddis and Millarville (Priddis)	July 26	E. E. Woodford	R.R.1, Calgary.
Pincher Creek	Aug. 15-16	H. Bossenberry	Pincher Creek.
Raymond	Aug. 4-5	S. F. Kimball	Raymond.
Red Deer	July 17-18-19	J. E. Welton	Red Deer.
Retlaw	Aug. 4-5	W. A. Hempel	Retlaw.
Richdale	Aug. 3	A. T. Penwarden	Richdale.
Rochester	Sept. 28	R. Gogouillot	Rochester.
Rocky Mtn. House	Sept. 11-12	Wm. Ellcnburgh	Rocky Mtn. House.
Rimbey	Aug. 24	W. Geo. Manson	Rimbey.
Sangudo	Aug. 25	R. Miehhausen	Sangudo.
Sedgewick	Aug. 9-10	E. S. Clemens	Sedgewick.
Sibbald	Aug. 2	C. O. Dudley	Sibbald.
Spirit River	Aug. 15	David Esplen	Roycroft.
Starland (Rowley)	Sept. 14	A. C. Smith	Rowley.
Stavely	Aug. 8	E. C. Webster	Stavely.
Stettler	Aug. 3-4-5	G. T. Day	Stettler.
Stony Plain	Aug. 10-11	Wm. Robertson	Stony Plain.
St. Paul	Sept. 19	J. E. Roy	St. Paul.
Strome-Killam (Killam)	Aug. 7-8	R. J. McGowan	R.R.1, Killam.
Swalwell	Aug. 2-3	Wm. Waldron	Swalwell.
Taber	July 25-28	W. C. Lane	Taber.
Three Hills	Aug. 4	C. P. McDonough	Three Hills.
Tofield	Aug. 19	Mrs. Peter Lee	Tofield.
Trochu	Aug. 8-9	R. H. Slipp	Trochu.
Thorhild	Sept. 1	U. G. Jardy	Thorhild.
Vegreville	Aug. 2-3	Chas. Fulton	Vegreville.
Vermilion	July 27-28	W. E. Sutton	Vermilion.
Veteran	Aug. 14-15	J. H. Ballantine	Veteran.
Viking and Birch Lake	Aug. 15-16	Wm. McAthey	Viking.
Vulcan	July 29	C. E. Colwell	Vulcan.
Wainwright	Aug. 2	Samuel Lewthwaite	Wainwright.
Warspite	Sept. 4	Wm. Pickard	Warspite.
Waterhole	Aug. 24-25	H. M. Bailey	Waterhole.
Westlock	Aug. 29	M. G. H. Gardam	Westlock.
Wetaskiwin	Aug. 14-15-16	C. D. Smith	Wetaskiwin.
Winnifred	July 20-21	T. P. Parker	Winnifred.
Youngstown	July 31-Aug. 1	E. E. Maxwell	Youngstown.

EXHIBITION ASSOCIATIONS

Calgary	June 30-July 7	E. L. Richardson	Calgary.
Edmonton	July 10-15	W. I. Stark	Edmonton.
Camrose	July 20-21-22	J. W. Forde	Camrose.
Lethbridge	July 31-Aug. 1-2	R. W. Gardner	Lethbridge.
Morinville	Aug. 15-16	J. B. Dalphond	Morinville.

Report of Chief Game Guardian

H. A. CRAIG,

Deputy Minister of Agriculture.

SIR,—

I have the honour to submit herewith the seventeenth annual report of this branch of your department, covering the administration of the Game Act and Prairie Fires Ordinance for 1922.

REVENUE

Not only the protection of big game, game birds and fur-bearing animals and other forms of beneficial wild life is the first object to be considered under the laws for the protection of game, but it is realized that this cannot be accomplished without the expenditure of moneys, consequently, the amount of revenue secured has a great bearing on the successful administration of the game laws of this province. If the expenditure made was a drain on the revenue of the province year after year, I am afraid that public sentiment would not be as favorable towards the protection of game. I am pleased, therefore, to be able to report an increase of upwards of \$8,000.00 over that collected in 1921.

GAME BIRDS

The year 1922 having proved one of the driest for some years, it naturally resulted in the breeding season for all classes of game being most favorable. The prairie fires during the months of May and June were not serious and the lack of cold rains resulted in excellent conditions for the hatching of birds. It is also noted that natural enemies were not as plentiful as in previous seasons, this resulting in an increased number of birds which was very noticeable at the opening of the season, and in spite of the large number killed by sportsmen, there is still a plentiful supply of breeding stock left. Water fowl were not so fortunate as the land birds, owing to the fact that many sloughs have become dry and lakes have lowered, with the result that there was a lessening of the food supply, and the birds consequently congregating in larger bodies of water, farm crops, in the vicinity of lakes, suffering to a greater extent than in former years. Some four or five permits to meet this situation were granted, but those concerned did not find it necessary to avail themselves of the privilege of killing ducks to any great extent.

Our season for wild ducks opening on September 1st, permitted farmers to protect their crops without the necessity of obtaining permits.

The supply of grouse (this includes prairie chicken and partridge) was quite, if not more plentiful than in the year 1921, with the result that those who availed themselves of the privilege of hunting did not have difficulty in securing respectable bags. It is

to be regretted, however, that so many who call themselves sportsmen, will not refrain from shooting these birds before the season opens. They apparently fail to realize that the game laws are framed for the protection of the birds in the interest of all concerned, and although heavier penalties were imposed than in former years it is felt that this has not had the desired effect, and still heavier penalties should be imposed and the guns of those caught shooting before the season opens should be forfeited to the Crown.

The European Grey Partridge (commonly called Hungarian Partridge) has increased in numbers in the central sections of the province and is still spreading, and is now found in a still wider area than in 1921. During the open season some of these birds were shot north of Edmonton, but it is generally conceded by sportsmen that once the bird becomes established its numbers will not be so easily depleted by shooting as our native birds. While the food habits of this bird have not been closely watched, the stomachs of those examined proved conclusively that it is a great destroyer of weed seeds and insects. It invariably feeds on the ground with the result that any grain which it has eaten is that which otherwise would be wasted.

Some information has been obtained as to the food habits of the Sharp-tailed Grouse (commonly called Prairie Chicken).

As opportunity offered during the open season of 1921, the writer, while shooting in the farming districts east of Edmonton (grain all stacked) invariably found the contents of the crop of these birds to consist of grain, weed seeds, leaves and other vegetable matter. The grain and the weed seeds had undoubtedly been obtained off the ground.

On the 21st of September, 1922, the contents of the crop of three prairie chicken which had been killed by a farmer in the vicinity of Seba Beach were examined and the results were as shown by items (a), (b), and (c).

- (a) 1 Mosquito
148 Berries
1 Ant
1866 Seeds of wild buckwheat
58 Juniper berries
148 Rose leaves
14 Moss leaves
- (b) 859 Wild buckwheat seeds
1 Berry
30 Leaves
- (c) 56 Berries
100 Kernels of wheat
1700 Wild buckwheat seeds
Miscellaneous leaves.

September 24th, 1922, contents of stomach (or crop) of Sharp-tailed Grouse found dead on the public road south of Lae

La Nonne which had flown from a wheat field nearby striking the telephone wires (grain in the nearby fields all stacked):

- 1 Fly
- 2 Lady bugs
- 320 Wheat
- 1028 Wild buckwheat
- 233 Mustard
- 36 Shepherd's purse leaves
- 218 Miscellaneous leaves.

Contents of stomach (or crop) of Sharp-tailed Grouse found dead on the roadside south of Edmonton on October 14th, 1922, (having flown from a grain field against telephone wires, all wheat stacked, oats still in stook):

- 507 Kernels of wheat
- 652 Wild buckwheat
- 250 Juniper berry seeds
- 93 Wheat hulls
- 362 Miscellaneous leaves.

It is my intention to follow up these investigations during the spring and summer months and ascertain for a certainty as to what the food of the Sharp-tailed Grouse consists of during the mating and hatching seasons, and during the time they are rearing their young. I am of the opinion that little or no grain will be found in the stomachs of the Sharp-tailed Grouse during those periods, but that worms, insects, weed seeds, and other vegetable matter which constitute their food during those periods, will predominate. I am satisfied that the result will be a surprise to those concerned and will show that the province as a whole, and the farming interests in particular are greatly benefitted by having a plentiful supply of these birds on account of their beneficial habits. I feel that it cannot be too strongly placed before the people of this province that excessive shooting of grouse in general, and the prairie chicken in particular, will result in injury to agricultural interests.

BIG GAME

As in 1921, the early part of the open season for big game between November 1st and December 14th, as applied to deer, moose and caribou was not as favorable for the big game hunter as he could wish, on account of lack of snow, making tracking difficult. What proved to be a very popular concession on the part of the legislature was with respect to the killing of deer, moose and caribou in the forest reserves of the Rocky Mountains under special license. One hundred and twenty-eight residents and forty-nine non-residents availed themselves of this privilege and, undoubtedly, this will be taken advantage of to a greater extent in future years as it becomes more widely known. There were 67 non-resident general licenses issued, and 1,062 resident big game licenses issued. There were fourteen resident farmers' big game licenses issued before the amendments to the Act were adopted by the legislature.

The number of big game animals killed by licensed hunters, reported by them in accordance with the Act, between the years 1906 and 1922, are as follows:

	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922
Antelope ..	49	45	89	126	101	105	119	.....	.....	.....	.....	.....	.....	close season	.....	.....
Moose	14	37	86	184	305	425	865	1335	1116	849	1026	900	974	1080	1018	913
Caribou .....	.....	.....	5	8	30	40	56	78	34	28	43	45	52	55	68	45
Mtn. Sheep .....	.....	.....	40	54	49	90	65	78	110	83	57	76	77	76	108	92
Mtn. Goat .....	.....	.....	38	46	56	58	42	61	40	26	37	43	33	35	47	44
Elk .....	.....	.....	7	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1 close season	.....	.....
Deer	59	125	299	540	619	768	908	1388	692	560	705	828	851	1047	1120	1180

FUR-BEARING ANIMALS

Beaver

As in previous years permits were issued to trap beaver to owners of lands on which the animals were causing damage. Two hundred and nine permits were issued and 442 beaver pelts were received by the department to be sold under the regulations relating to the trapping of this animal. The total realized was \$8,198.85. The average price obtained was \$18.549. The government's proportion on the basis of 25% was \$2,049.71. There were 24 beaver pelts forfeited to the government which realized \$412.00, making an average of \$17.166 per pelt.

Muskrat

This animal is undoubtedly the most valuable of the fur-bearers. Its pelt is used for the manufacture of coats, coat-linings, and after dressing and dyeing is known as Hudson Seal, at present one of the most valuable and best wearing, also one of the most expensive and fashionable furs. From records based on reports received from licensed fur dealers and buyers, the Alberta muskrat equalled in value all other classes of pelts of wild animals combined. A total of 742,440 pelts at an average value of \$1.05 per pelt, were marketed in the province. This amounted to \$779,562 in value.

While dependable figures are not available for previous years, it is believed that our supply of muskrats will soon become depleted if the number as above mentioned are taken yearly. It was found necessary in 1920 to prohibit the trapping of muskrats to the south of the North Saskatchewan River except under such regulations as the Lieutenant Governor in Council might approve of. This action was found necessary owing to the scarcity of this animal in the area mentioned, due not only to extensive trapping but to dry seasons which reduced its food supply as well as the area of breeding grounds. A few permits were issued in 1921 to cover the season 1921 and 1922; this was again followed in 1922, and if conditions warrant, the same will apply in 1923. There were 714 permits to trap muskrats issued in 1922, but the number of permits issued for the season 1921 and 1922 was 803, 257 of which were not returned. The total number of pelts taken and reported was 37,744, making an average of 69 pelts for each permit; this means that 546 land owners averaged 69 muskrat pelts which were worth at least \$1.00 per pelt. Under the administration of the

Act, 869 muskrat pelts were forfeited to the Crown, which sold for \$612.00, averaging 70 cents each. As these were low grade pelts, the price realized was greater than expected. From reports received from the various sections of the province, the catch of rats was very poor except in the extreme north. It is expected that a large number of pelts will be brought from that part of the province this coming spring, but it is possible that over-trapping will take place owing to the fact that a greater number of trappers than in previous years have gone north for this purpose.

Foxes

A regrettable situation has arisen which has existed for several years and that is with respect to the taking of young foxes in the months of April and May, and to some extent in June, with the object of selling them to fur farmers or retaining them in captivity until winter and then killing them for their pelts. Only silver, black and best crosses are kept, the other foxes either being killed or allowed to shift for themselves; this results in a large proportion of the reds and poor crosses perishing. Those foxes which are kept in captivity are not properly fed or cared for, and their quarters being cramped or unsuitable, a very large percentage of these die. The result therefore is that the supply for trapping purposes is gradually being depleted and some very poor pelts are being placed on the market; this can be to a great extent eliminated by giving the foxes the same protection as mink, fisher and marten, the open season for which is from November 1st to April 1st of the following year.

TAX ON FURS

The imposing of a tax on the pelts of wild animals which took effect in 1920 has resulted in the obtaining of revenue amounting to \$37,145.79 for 1922; an increase over 1921 of upwards of \$5,000. Each year we should be able to collect an increased amount, but this can be greatly simplified by legislation to close the loop-holes whereby some are evading the payment of the tax.

Tax on the following pelts was collected during the year:—

Badger	266
Beaver	199
Wolverine	38
Ermine (Weasel)	46,273
Otter	145
Lynx	3,211
Marten	2,289
Skunk	3,125
Bear	1,064
Fisher	31
Fox (silver, black)	192
Fox (cross)	1,309
Fox (red)	2,083
Fox (kit)	110
Muskrat	549,161
Mink	10,195
Moose	36
Caribou	1
Deer	2
Goat	1

LICENSES AND PERMITS

As compared with 1921 there has been a falling off of two general game licenses; an increase of 12 in the non-resident bird licenses; a large increase in the number of resident big game licenses, this being due to the eliminating of the resident farmer's big game license. The total for resident big game licenses, however, does not equal the total of resident big game and resident farmers' big game licenses issued in 1921; this is due, not only to the elimination of the farmers' licenses but also economical conditions in the province. There is a drop of approximately 2,000 in the number of bird game licenses issued; an increase in the number of guides' licenses; a drop in the number of permits to export; an increase in the number of permits to trap beaver; an increase in resident fur dealers, also an increase in the number of permits to trap muskrats; and an increase of upwards of \$8,000 total revenue, which will increase as further returns are received. A surplus over and above all expenditure for 1922 will be upwards of \$49,006.17 which will give a surplus over and above expenditure since the organization of this branch of your department of upwards of \$161,875.67.

CONVICTIONS

The records of the department will show a greater number of convictions than in any previous year, the total fines imposed being in excess of \$3,000.

No. of Convictions Under The Game Act	Total Fines Imposed	Average Amount of Fine
216	\$3,145.05	\$14.56

PRAIRIE FIRES REPORT, 1922

I am compelled to report that the fire situation for 1922 has been very little, if any improvement on that of 1921.

The excessively dry season left a very serious fire menace, owing to the fact that fires unextinguished in 1921 and previously, in a great number of cases were still burning in the soil in 1922. While the situation was not as serious as anticipated, being due to the fact that there were very few excessively windy days, these fires were not extinguished but allowed to burn throughout the summer until the month of August, when the general impression was that if conditions then existing continued, the losses by fire would be enormous before the winter set in. A few beneficial rains somewhat relieved the situation, but during the latter part of September and throughout October many fires were allowed to run at large, and in the majority of cases these originated from ground fires. A great amount of damage was caused to pasture, hay, buildings burnt and crops destroyed. Probably the greatest loss to the province was the burning of the soil thereby destroying its fertility. There seems to be too much apathy on the part of those who should be interested, and although there was some improvement over the conditions of 1921, there is, undoubtedly, still great room for improvement. The amendments to the Ordinance giving municipal districts more authority, resulted in improving the situation. I feel some pressure should be brought to bear on municipal districts as well as in unorganized districts to compel the extinguishing of ground fires during the winter and early spring as any efforts with this object in view, will in the long run be of great benefit to those living in such districts.

The usual method of clearing land by the indiscriminate use of fire and exercising no control over such fire, cannot be too strongly condemned. There is absolutely no justification for any person to kindle a fire thereby endangering the lives and property of his neighbors, unless he takes all the precautions prescribed by the Prairie Fires Ordinance, and even then under some conditions he is not justified in setting out fire. The sooner those who require to clear the land by the use of fire are made to realize that they are not justified in endangering the lives and property of other residents of the province, the better. If those who have land to clear would cut the brush and trees, pile the same and leave the burning until winter when there is snow on the ground, they would in a great majority of cases make more headway and not leave themselves liable to actions for damage caused by fires which may escape contrary to the provisions of the Ordinance, to say nothing of penalties which they are liable to have imposed if taken before a Justice of the Peace by a Fire Guardian.

Objection has been made by two municipalities which have been entirely or partially included in the fire district, and if it is considered that the exclusion of these districts from a fire district

is justifiable, the same can be easily provided for. Many, however, believe that the whole province should be made subject to the restrictions provided for in fire districts.

It is fortunate that the railways are taking more precautions than previously with respect to the prevention of fire spreading from their rights-of-way. This branch of your department being empowered by the Railway Commission to enforce their regulations with respect to fireguards along lines of railways has, I believe, worked out to the advantage and satisfaction of all concerned. I trust that with the co-operation of the railway companies, the number of fires will be reduced from year to year.

The convictions reported and the total penalties imposed for the year 1907 to 1922 are as follows:

Year	No. of Convictions Reported.	Total.	Average Fine.
1907	33	\$ 741.00	\$22.45
1908	105	1,570.00	14.95
1909	94	1,796.00	19.10
1910	247	4,247.38	17.20
1911	33	565.00	18.25
1912	56	1,008.00	18.00
1913	48	948.75	20.52
1914	89	1,395.93	15.68
1915	39	681.16	17.47
1916	113	2,121.19	18.77
1917	35	888.00	25.37
1918	40	946.90	23.67
1919	35	958.50	24.55
1920	11	224.60	20.41
1921 .....	...	445.25	.....
1922	44	750.00	17.04

Respectfully submitted,

BENJAMIN LAWTON,

Chief Fire Inspector.

Report of the Director of Women's Extension Service

H. A. CRAIG,

Deputy Minister of Agriculture.

SIR,—

I have the honour to submit herewith a report of the Women's Institute branch and the Women's Extension Service branch for the year 1922.

Women's Institute and Women's Extension Service work has followed the line of former years and covered wide fields. In connection with the Women's Institutes the provincial standing committees which were organized have taken a definite place in the institute work. Suggestions prepared at different times to help in this work, have been gathered together and have been sent to constituency conveners and chairmen of the different standing committees in each constituency.

The appreciation of the institutes by many of the women of the province continues to be demonstrated. The value of the work done along educational lines cannot be estimated and may be considered from two points of view, namely: What is done by the members in their own institutes, and what the institute or society does in making the local arrangements when the government provides lectures, lecture-demonstrations or short courses. The success in the future, of the latter work depends on good co-operation between the Department of Agriculture and the institutes and societies throughout the province applying for technical and other educational assistance.

The community work done by the institutes covers every branch of useful activity. The members aim at making their local conditions healthy, clean and beautiful. They assist almost always personally and very often financially with things that tend to uplift community life and by this means promote the highest and finest interests of the people and the district in which the institutes are situated.

There are 282 Women's Institutes in the province with an approximate membership of 9,017 members, as taken from the returns entered on the grant forms for 1921. An average allowance has been made in a few cases where institutes have not sent in any return.

The institutes that have disorganized since the movement has been started have been removed from the books. Ten institutes disbanded in 1922 and fifty-eight disorganized during the years 1917 to 1921, making an average of approximately eleven in each of these years. During 1922 fifteen institutes have been organized.

Development has taken place very rapidly in connection with requests for sewing courses. Too many applications came in during 1922 to be dealt with and these have had to be transferred to the 1923 itineraries. The courses have been greatly appreciated by all those who have attended the classes where women with the extremes of experience in sewing have met—the woman who has made the clothing for the family for years and the one who has done little or no sewing and who has still to be instructed in the art of using a thimble.

The Women's Extension Service of the Department of Agriculture has unlimited possibilities within its reach. It does not require abnormal vision to see and realize the economic value of such an education service to the community generally and the province as a whole.

DEMONSTRATION AND LECTURE WORK

In 1922 extension work was carried on, on lines similar to those of former years. Local institutes and U.F.W.A. made the arrangements in their districts. These societies did the advertising of the lectures, lecture-demonstrations, short courses and baby clinics. They provided the place of meeting and part of the equipment, where this was required. Extension work was carried on during May, June, July, August, September, October, November and December.

No. of Foods and Cookery Short Courses	2
No. of Demonstration-lectures given	12
Total attendance at meetings	276
Average attendance	23
No. of Sewing Short Courses	26
No. of Demonstration-lectures given	392
Total attendance at meetings	5417
Average attendance	14
No. of Handicraft Short Courses	1
No. of Demonstration-lectures given	6
Total attendance at meetings	106
Average attendance	18
Total attendance at all Short Courses	5801
No. of Single Demonstration-lectures given	32
Total attendance at Demonstration-lectures	545
No. of Lectures given	254
Total attendance at Lectures	9244
Average attendance at Lectures and Demonstrations	34
Total attendance at Short Courses, Lectures and Demonstrations	15,590
No. places visited	325
No. meetings held	696
No. Constituency Conferences visited	35
Total attendance at Constituency Conferences	2050
No. District Conferences held	1

The total attendance at all meetings held under the direction of the Women's Extension Service Branch in 1922 was 15,590. This educational work going on quietly and constantly should do a great deal towards assisting the women of the province in their homes.

Close co-operation with the Public Health Department has been maintained. Itineraries for baby clinics have been prepared by this branch and held by public health nurses. This year the new film "Social Hygiene for Women" has been shown and lectured on at a number of meetings.

Sewing courses have been held for ten, five and three days. These courses have been greatly appreciated, so much so that we have not been able to grant all the requests. Single day sewing lecture-demonstrations have been given with great success.

One basketry course was given and the work done was excellent. One institute which had this course in 1921 invited a neighboring club to visit it this year and have lessons from some of those who took the course. The experiment not only spread knowledge but also helped in the building up of inter-community life.

Among the subjects treated at lectures are the following.

- "Milk and the Nation."
- "The House Beautiful."
- "Our Flag."
- "Personal Hygiene and Sanitation."
- "Care of the Body."
- "Preventive Measures."
- "Training of Children in the Formation of Personal Habits."
- "Preparing for Motherhood." (Mental and Physical).
- "Child Welfare."
- "The Value of the Clinic to the Community."
- "The Psychology of the Child Mind, more especially in regard to Punishment."
- "The House We Live In."
- "The Proper Diet and Care of Children."
- "The Food Problem—Its Relation to Health."
- "Community Work."
- "Rural Education—Its Relation to the Home and School."
- "Clothes and the Girl."
- "The Principles of Dress Design and Function."
- "Importance of Food for a Girl's Good Health."
- "Some Factors for Interesting Living for Every Day."
- "Getting Our Money's Worth."
- "Easier Times for the Housewife."
- "The Family—Its Origin and Development."
- "The Three R's for Girls."
- "The Community Spirit."
- "Citizenship."
- "Home Ideals."
- "Educating Girls for Womanhood."
- "Is Home-Making a Profession?"
- "Some Problems of the Rural Women."
- "Practical Hints and How to Solve Them."
- "Women's Part in the Building of Our Nation."
- "Training for Citizenship."
- "Dangerous Facts and Sane Fancies."
- "Common Parliamentary Usage."
- "Our Natural Resources—The Child."
- "Our Natural Resources—Air, Water and Sunlight."
- "Our Natural Resources—Health."

"Our Natural Resources—Beauty."
 "A Mouthful of Wisdom."
 "Emergency Nursing."
 "The Place of Prevention in Modern Medicine."
 "Child Welfare."
 "How to Stop Dollar Leaks."
 "Requirements of a Good Citizen."
 "Hints on Laundry."
 "Highways to Health and Happiness."
 "Remodeling Garments."
 "Furnishing on a Limited Income."
 "View from Our Porch."
 "The Principles of Correct Dress."
 "Dressmaking Made Easy."
 "Ethics of Dust."
 "Present-Day Food Problems—The Balanced Meal—The School Lunch."
 "Women's Responsibilities."
 "The Proper Diet and Care of Children."
 "Development of Community Life and Simple Entertaining."
 "Canning—Fruits and Vegetables."
 "Milk and Milk Dishes."
 "Cool Dishes for Hot Days."

LOAN COLLECTION AND TRAVELLING LIBRARIES

The loan collection of the Women's Extension Service, which is composed of reference books, bulletins, pamphlets and clippings from magazines and newspapers, covers a wide range of subjects. This material is available to anyone living in the province of Alberta—the clippings or books being loaned for a period of two weeks.

The Women's Extension Service is on the mailing list of many of the universities in Canada and the United States and received, from this source, the most recent and authoritative bulletins on rural community interests, educational topics, and those dealing with home economics.

During the year 1922, approximately 2,000 references were sent out from the Women's Extension Service library to residents of Alberta. Ninety women's organizations received travelling libraries from this department during the past year.

FINANCIAL RESPONSIBILITIES

The number of women's institutes which have applied for the grant is 231 and on their application forms they give their financial returns as \$66,332.87. According to the proportional subscription for the 231 institutes it is estimated that the 282 institutes would have represented \$80,977.80.

ANNUAL PROVINCIAL CONVENTION

In connection with the success of the eighth annual convention we cannot do better than quote the words of Mrs. A. H. Rogers, provincial secretary of the Alberta Women's Institutes, who says: "Though the attendance was smaller than usual the convention was a remarkably successful one. The interest was keen all the way through and the delegates went home feeling that their time had been well spent."

The convention meetings were held in the ball room of the Palliser Hotel, Calgary. The arrangements made by the management for the comfort of the delegates were splendid and the appreciation of the convention was voiced in a vote of thanks to Mr. Edwards and his staff. The success of the convention was to a large extent due to the energy displayed by the members of the Calgary Women's Institute in making local arrangements, meeting trains and directing delegates to places where they could find suitable accommodation.

Interesting and instructive addresses were given by the President, Miss Isabel Noble; Mrs. Nellie McClung, M.L.A.; Mrs. Margaret Lewis, Provincial Factory Inspector; Mrs. R. B. Gunn, Vice-President U.F.W.A.; Miss Louise Lovely, Motion Picture Actress; Hon. George Hoadley, Minister of Agriculture; Mr. G. Fred McNally, Supervisor of Schools; Mr. E. S. Bishop, Liquor Commissioner; Mr. J. F. Price, Manager, Allen's Palace Theatre; and a splendidly practical paper was read by Dr. C. B. Johnson on "Oral Hygiene." Mrs. Francis Reeves entertained the delegates with a selection from her own writings.

At the formal opening of the convention Mayor Adams attended to welcome the delegates to the city of Calgary and to bring to them the greetings of the citizens. Mrs. H. G. H. Glass, President of the Local Council of Women, brought greetings from that organization. Mrs. Glass said the members of the Women's Institute were "attentive listeners, intelligent readers, deep thinkers and wise counsellors."

Mrs. W. F. Nease of the Calgary Women's Institute, welcomed the delegates on behalf of the institute. Mrs. William Stewart, Peace River, replied to the address of welcome. From such hospitable and hearty greetings the visitors derived inspiration and encouragement for their work.

Mrs. Marshall of Calgary, was untiring in her efforts to make the music the success it was. The delegates were favored with a number of charming solos and duets. Community singing was an enjoyable part of the proceedings and helped to carry the work along with a good swing.

REPORTS BY CONVENERS OF PROVINCIAL STANDING COMMITTEES

Public Health and Child Welfare

Mrs. McIvor reported that a number of the constituencies were interested in Child Welfare. The special piece of work to be taken up has usually been determined by local needs. Many branches have taken the provision of hot school lunches in hand, building kitchens, supplying equipment, and providing the food in some cases. School equipment where this was not complete has been supplemented, cleaning of schools has been carried on, water pumps supplied and every form of assistance given to help the children to have healthy and pleasant surroundings to work in.

Quite a large part of the report is given over to an account of the valuable work done by the Public Health Nursing Service. The nurses of the Department of Public Health do district nursing, hold baby clinics, school health inspections and devote a large amount of their time to lecturing and teaching.

Baby clinics have been held by a number of institutes. Lectures on pre-natal care of the mother, first aid, home nursing, care of the teeth and many kindred subjects have been given. The report presented shows an appreciation on the part of the institute members of the value of health, the prevention of disease through educational channels and the practical application of such knowledge.

Agriculture

Mrs. McKay was unable to be present to read her report but she sent interesting information to the delegates. She wrote; "The first industry in the world was agriculture and so it is today. We should encourage better and more scientific methods in our locality."

Things of interest to all were:

First, the importance of a good vegetable garden, dairy farming and poultry raising as income-producing features.

Second, the educational side of farming.

Third, the beautiful side of farming.

The valuable work being done through the rural school fair is dwelt upon and attention is drawn to the benefits to be gained by children being taught, while they are children, to have an interest in things agricultural.

Household Economics

Miss McDermid in her report calls attention to the benefits to be derived from the systematic study of domestic science. "We must remember that household economics is a study of all things pertaining to the home and stands for the ideal home life of today unhampered by traditions of the past. Only by intelligent endeavor to study can any woman become a good homemaker. There are workers of all classes and intelligence engaged in the occupation of homemaking and it is necessary to initiate, plan, direct and carry out operations which involve to a greater or lesser degree, all the sciences and arts known to man. The successful homemaker must study and discuss with others, common problems."

Miss McDermid considers that the end in view can best be gained by the chairman of the standing committee on household economics in each constituency bringing this matter prominently before members of the institutes.

Education and Better Schools

Mrs. Hughes, in her report, reminds us that: "Impressions of childhood are of long duration" and brings prominently forward the importance of a pleasant environment during the whole of the

school life. Work of all kinds is being done throughout the province, by the institutes and institute members to give children such helpful surroundings. Good pictures are amongst the things singled out as being of great advantage in the forming of good impressions. A long list of articles supplied to schools is given.

It is suggested that graduating exercises and the giving of diplomas might help to draw attention to the importance of every normal child completing at least the eighth grade. If this end could be gained it is probable that the percentage of those going on to high school would be higher. Only one to two per cent of the rural school children continue their studies, at present, into high school subjects.

The value of the agricultural schools in the province is stressed, but these are not used to the extent that they might be. The suggestion which has already been put into practice by some institutes is again brought forward—that an effort should be made to provide scholarships to enable children that could not otherwise attend, to take advantage of such splendid educational facilities. The whole report shows that interest in the better school movement is alive and keen.

Immigration

An extensive report on Immigration was prepared for Mrs. Barss, by Robert C. Stead, Director of Publicity, Department of Immigration and Colonization, Ottawa. This report deals with the work from the general point of view, from that of nationality and the adult and juvenile problems.

The work of the Women's Division of the Department of Immigration in Canada and the Old Country is fully outlined. This is of particular interest to institute members in view of the fact that they passed a resolution approving of a women's division in connection with this work.

Canadianization

Mrs. Morley stated that she did not have many returns sent to her in connection with her committee work. The work is being carried on in different ways by addresses on patriotism, sewing classes, parties, special prizes at school fairs, essays on subjects of special interest to Canadians and in other ways too numerous to mention.

Mrs. Morley considers that more might be done in connection with "patriotic days" and strongly urges the need for a "Citizens' day" to be inaugurated by statute for our newly naturalized.

The report concludes with suggestions for the carrying on of the work in the future.

Legislation

Mrs. Montgomery reports that on January 11th the law committee of the provincial executive of the National Council of Women waited on Premier Greenfield and the cabinet.



DELEGATES TO CONVENTION OF W.L. GIRLS' CLUBS, CALGARY, JUNE, 1922



Mrs. Montgomery, provincial convener of legislation, and Mrs. A. H. Rogers, provincial secretary of the Alberta Women's Institutes, represented the Women's Institutes on this delegation.

The subjects presented to Premier Greenfield and the cabinet were: The care and treatment of the mentally deficient, equal rights in divorce for men and women, the reading of the Lord's Prayer in public schools, the need for housekeeping nurses, the need of public institutions for the care and detention of certain classes of persons, the Mothers' Allowance Act and the extension of some of its provisions.

Throughout Canada, women's institutes seem to be working along the above mentioned lines. The study of civics, laws pertaining to illegitimacy, property rights of women, prison reform and other subjects is being carried on.

The various provinces are having laws passed as it is found these are required. The need for watching social developments and for respecting the laws of the country is strongly emphasized. It is only in this way that the public welfare can be guarded.

Publicity

Mrs. J. F. Price says in her report that a study of the problems of publicity makes it apparent that the work of this department is three-fold:

1. To supply each local club with certain practical suggestions, the observance of which will secure increased and better publicity.

These suggestions, briefly, are—

Make your secretary or press convenor responsible for the news of all meetings and activities to your local papers.

Keep to facts. Tell your story simply. Tell it all. Do not embellish it with the writer's personal opinions. Write all names plainly and write on one side of the paper only.

2. To supply the public with accurate information about women's institute history, principles and practices.

3. To correct wrong or false impressions of women's institutes and women's institute work.

The system to be followed if good publicity is to be secured is fully stated and the need for co-operation between each institute secretary and the provincial publicity convenor is urged.

The progress made in collecting papers on the history of Alberta is reported. A good start has been made in some districts and the convenor urges united action on the part of institutes in getting material as thereby "they will be rendering the province of Alberta and the children of future generations a genuine service."

ALBERTA WOMEN'S INSTITUTE FUND

Mrs. A. H. Rogers, provincial secretary said, "The need for a fund is surely obvious to all. First there is the railway fare. To bring one delegate from each institute and each Girls' Club, constituency convenors, convenors of standing committees, the executive of the Women's Institutes and Girls' Clubs would cost at least \$5,000.00. Other organizations have pooled fares but this has not been entirely satisfactory as some always pay in and never receive. Should our fund be adequate every delegate would receive her fare whether it was \$1.00 or whether it was \$34 (from Grande Prairie). Unless we can evolve some way by which those afar off can come to the convention, we are going to lose the greatest opportunity for disseminating instruction, enthusiasm and inspiration in Women's Institute Extension Service." Other details are then mentioned and the amount required by the women's institute to give them a satisfactory fund is stated to be around \$7,000.00. Amongst the resolutions passed at the convention one will be found dealing with this subject.

DISTRICT REPORTS

Report of District No. 1 was given by Mrs. Margaret Boyd, Vanrena, Director.

Report of District No. 2 was given by Mrs. C. A. Gates, Stony Plain, Director.

Report of District No. 3 was given by Mrs. Wm. Huyek, Strome, Director.

Report of District No. 4 was given by Mrs. J. N. Beaubier, Champion, Director.

ELECTION OF OFFICERS

The following officers were elected for the ensuing year:

- Mrs. J. N. Beaubier, Champion, Provincial President.
- Mrs. Jas. Boyd, Vanrena, First Vice-President.
- Mrs. A. H. Rogers, Fort Saskatchewan, Provincial Secretary.
- Mrs. S. B. Stewart, Peace River, Director, District No. 1.
- Mrs. C. A. Gates, Stony Plain, Director, District No. 2.
- Mrs. Wm. Huyek, Strome, Director, District No. 3.
- Mrs. Jas. Hughes, Cavendish, Director, District No. 4.

STANDING COMMITTEES

Convenors for the standing committees are as follows:

- Child Welfare and Public Health—Mrs. D. R. McIvor, Gibbons.
- Education and Better Schools—Mrs. F. S. Grevett, 240 - 13th Ave. W., Calgary.
- Legislation—Mrs. H. J. Montgomery, Wetaskiwin.
- Immigration—Mrs. Wm. Barss, Delia.
- Household Economics—Mrs. Macgregor Smith, 11122 - 84th Ave., Edmonton.
- Agriculture—Mrs. Jas. McKay, Provost.
- Publicity—Mrs. J. F. Price, 1220 - 15th Street N.W., Calgary.
- National Events and Canadianization—Mrs. E. R. Morley, Verdant Valley.

WOMEN'S INSTITUTE GIRLS' CLUBS

The Third Annual Convention of the Women's Institutes and Girls' Clubs was held in the ball room of the Palliser Hotel, Calgary, on June 16th and 17th, 1922.

A splendid address, welcoming the girls to the city of Calgary was given by Miss Christina Hunter, secretary of the Canadian Girls' in Training, Calgary. Miss Blanche Cox of Edgerton, very ably replied to this address.

PRESIDENT'S ADDRESS

Miss Minnie Page, of Elnora, president of the girls' branch of the Women's Institutes gave a short address at the opening session on Friday morning, in which she emphasized the value of persistency in any undertaking worth while. Persistency will do away with indifference or discouragement, which may otherwise creep into their club life and prevent the accomplishment of their work.

Miss Page asked the girls to realize their responsibility in regard to citizenship, and urged them to make themselves familiar with the laws and public affairs, in order that they may be able to vote intelligently when the time comes for them to have this privilege.

A number of delegates gave reports from their clubs and discussions followed these, on different phases of the work.

The girls greatly appreciated the instrumental and vocal solos played and sung by Calgary friends. Community singing was entered into most heartily and seemed to be thoroughly enjoyed by all present.

Two inspiring and practical addresses were given. One by Mrs. E. S. Kirby on "The Twentieth Century Girl," the second by Miss Evelyn S. Story, secretary of the Girls' Work Board of Alberta, on "Living Together."

A very interesting lecture and demonstration on physical culture was given by Miss Jean E. Ramsay. Miss Ramsay drew the girls' attention to the fact that physical culture should aim at producing and maintaining health rather than large-muscled athletes. Physical education included anything that tends to create a love of the open air. The well balanced body makes for a well balanced mind. Miss Ramsay got a class of girls from the Mount Royal School to give a splendid display of exercises.

The delegates were entertained at a banquet by the local branch of the C.G.I.T., and to lunch by the Calgary Women's Institute. The mayor of Calgary arranged that the girls had a sight-seeing ride around the city on the scenic car. The girls thoroughly enjoyed those entertainments which were got up on their behalf.

FINANCIAL RESPONSIBILITIES

Fifteen Women's Institute Girls' Clubs have applied for the government grant and these have raised \$2,296.10. If the sixty clubs on the books subscribe proportionately the amount would be \$9,184.40.

ELECTION OF OFFICERS

The officers elected for the ensuing year are as follows:

Miss Minnie Page, Elmora, Provincial President.
Miss Blanche Cox, Edgerton, Vice-President.
Mrs. Clara Johnson, Alliance, Secretary.
Miss Marie Chalmers, Waterhole, Director, District No. 1.
Miss Clara Jorgenson, Westlock, Director, District No. 2.
Miss Kathleen Ross, Olds, Director, District No. 3.
Miss Hazel Layman, Vulcan, Director, District No. 4.

In conclusion, I have much pleasure in acknowledging, with thanks, the efficient services rendered by those associated with me in the work of this branch.

Respectfully submitted,

JESSIE C. MACMILLAN,
Director.

Report of the Publicity Commissioner and Statistician

H. A. CRAIG,

Deputy Minister of Agriculture.

Sir,—

I have the honour to submit the annual report of the Publicity and Statistics branch of the Department of Agriculture for the year 1922.

Since the beginning of 1922, this branch has been in charge of the undersigned, with Mr. F. G. Forster as assistant publicity commissioner. Since the month of July last, Mr. Forster has been giving practically his entire attention to the statistical work of the branch, with the result that some very valuable information has been collected along statistical lines, and the nucleus of a statistical bureau established.

In addition to the collection of statistics, the publicity branch is concerned with the preparation and distribution of literature and information concerning the province of Alberta, and general publicity work in this regard, the editing and distribution of the publications of the agricultural department issued from time to time for educational work among the farmers of the province, the issuing of periodical crop reports during the crop season, and the handling of the advertising of the agricultural department. In December last, the motion picture bureau of the department was placed under the jurisdiction of the branch.

Immigration—Early in the year, the Prime Minister, Hon. Mr. Greenfield, issued a definite statement on the government's attitude in the matter of immigration, to the effect that, at present, there should be no encouragement of wholesale immigration to the province, but that work in this connection should be confined to preparation for the time when active immigration on a larger scale could be encouraged, and to the encouragement at present only of those who had sufficient financial resources to establish themselves. This branch has confined its efforts in this respect to this policy, and has concerned itself chiefly with the answering of enquiries concerning the province, and in co-operating with the irrigation branch in efforts to colonize the lands of the Lethbridge Northern Irrigation District.

With the latter end in view, and in co-operation with the irrigation branch, this branch placed an agricultural exhibit at exhibitions in Billings, Montana, Salt Lake City, Utah, and Twin Falls, Southern Idaho. Your commissioner also paid a visit to the Colorado State Fair at Pueblo, Colorado, in company with Mr. M. D. Mills, special irrigation colonization agent of the Dominion government. During the tour a great many prospects for the irrigation lands were interviewed, and the interest displayed in the exhibit and in Alberta in general was very keen.

Agricultural Publications—There has been a keen demand throughout the past year from farmers of the province for instructive literature and bulletins issued by the department, which is one evidence of a desire to develop the industry of farming along more diversified lines. Many hundreds of these pamphlets have been distributed by this branch, including the new bulletins issued on practical irrigation, summerfallow, winter rye, the dairy herd, and the silo.

A large number of these pamphlets have been distributed to schools in the province in accordance with arrangements with the education department, in connection with the new course of studies.

Weekly Bulletin—At the beginning of 1922, this branch inaugurated a weekly news letter covering activities of the government and including items of interest concerning development in the province. This letter is sent to all newspapers in the province, as well as several newspapers in Canada and abroad, and has been put to wide use.

THE 1922 CROP

The crop season of 1922 may be described as one of somewhat improved conditions over the previous four years, with respect to crop yields, but there were several disappointing features. Portions of the province still suffered from drought conditions, with the result that the yields in these districts were very small. This fact, combined with the general depression in prices of farm products, not confined to Alberta alone, resulted in a rather unsatisfactory year all round for the industry of agriculture. One encouraging feature, however, was the fact that districts which for the past four years have suffered from more or less severe drought conditions, were favored with very good yields of grain during 1922, which served to improve financial conditions not a little among the farmers of those portions of the province.

The seeding season was somewhat later than usual, particularly in the southern part of the province. Moisture conditions attending seeding operations generally were very satisfactory. A larger acreage than in 1921 was put into crop, in the south rye forming from 20 to 30% of the acreage. Seeding was well completed by the third week of May.

As the growing season proceeded, a shifting of the dry belt of previous years to the northward was recorded. While the southern areas continued to receive fairly heavy precipitation, the central and northern areas, together with some districts in the south-eastern section, experienced a shortage of rainfall and in July the lack of moisture became serious in these areas, and it was realized that the yields would be affected. Pasture also suffered rather seriously. This situation prevailed up to harvest time.

Taking the province as a whole, the resultant crop was uneven. On new breaking and on well-worked summerfallow, good yields were obtained. On stubble plowing, however, the yields were

very light. Over three-quarters of the province the yields did not come up to early expectations. A very considerable portion of the oat crop, suffering for lack of moisture to bring it to rich maturity, was cut for hay. A large area, particularly in southern Alberta, had been sown to rye, but before the time for harvesting of this crop arrived, it was seen that the price to be realized for rye would be low, and at least 50% of the crop was cut for feed purposes.

The areas from Calgary south extending to the international boundary and west of the Lethbridge-Aldersyde branch harvested the heaviest crop since 1915. Some fields of wheat in this area yielded as high as 30 and 40 bushels to the acre, while the average over the entire area, according to threshers' returns received, was 16½ bushels.

The crop in the south-eastern portion of the province was very spotted, and generally speaking, small yields were realized. The average for wheat in this area was shown to be nine bushels to the acre.

The central and northern sections, owing to dry conditions, realized small yields, the average for wheat in these areas being between 10 and 12 bushels.

The average yield in all grains for the whole province, according to threshers' returns, have been shown to be as follows: Spring wheat, 11.40 bushels to the acre; winter wheat, 11.40 bushels; oats, 21.50 bushels; barley, 14.90 bushels; rye, 10.30 bushels, and flax, 4.45 bushels.

The grasshopper plague threatened to be a serious menace at the beginning of the crop season, the area of the plague having spread northwards, but the highly concentrated campaign carried on by the department, the municipalities and the public in general, was successful in confining the loss to about 3% of the crop in the affected areas.

As appendices to this report will be found the following tables:

1. Map showing crop districts into which the province is divided.
2. Table showing estimated yield and value of agricultural products and livestock in Alberta for the years 1921 and 1922.
3. Tables showing numbers and value of different classes of livestock from 1917 to 1922.
4. Table showing average yields of various grains according to provincial electoral ridings.
5. Table giving summary of acreage and yields of leading grains during past ten years.

6. Table showing grain production of Alberta from 1906 to 1922.

7. Table showing maximum and minimum temperatures and precipitation at various points in the province for 1922.

8. Table showing precipitation figures for 38 years, also table showing hours of sunshine for 14 years.

9. Table showing frost-free period at various points in province in years from 1886 to 1921.

10. Diagram of comparative precipitation figures.

Respectfully submitted,

COLIN G. GROFF,

Chief Publicity Commissioner.



ALBERTA CROP DISTRICTS

- No. 1 — SOUTH-EASTERN DISTRICT—Comprising Provincial Constituencies of Medicine Hat, Taber, Warner, Redcliff, Bow Valley, Hand Hills, Acadia and Coronation.
- No. 2 — SOUTH-WESTERN DISTRICT — Comprising Provincial Constituencies of Cardston, Pincher Creek, Macleod, Lethbridge, Little Bow, Claresholm, Nanton, Okotoks, High River, Rocky Mt., Calgary, Gleichen and Cochrane.
- No. 3 — EAST-CENTRAL DISTRICT —Comprising Provincial Constituencies of Stettler, Camrose, Sedgewick, Ribstone, Wainwright, Alexandra, Vermilion, Vegreville, Whitford, Beaver River, and St. Paul.
- No. 4—WEST-CENTRAL DISTRICT — Comprising Provincial Constituencies of Didsbury, Olds, Innisfail, Red Deer, Lacombe, Ponoka, Wetaskiwin, Leduc, Edmonton, South Edmonton, Stony Plain and Edson.
- No. 5—NORTHERN DISTRICT—Comprising Provincial Constituencies of Athabasca, Grouard and Clearwater.
- No. 6—PEACE RIVER DISTRICT—Comprising Provincial Constituency of Peace River.

DEPARTMENT OF AGRICULTURE

ESTIMATED YIELD AND VALUE OF AGRICULTURAL PRODUCTS AND LIVE STOCK—ALBERTA

	Acreage		Average Yield per Acre		Yield		Price		Value	
	1922	1921	1922	1921	1922	1921	1922	1921	1922	1921
Fall Wheat	64,554	85,114	Bush.	Bush.	Bush.	Bush.	\$.74	\$.71	\$ 554,131	\$ 1,042,000
Spring Wheat	5,701,041	4,504,290	11 60	17 25	748,826	1,408,000	5 00	7 77	50,043,737	39,714,000
Oats	1,614,500	2,139,743	21 50	11 30	64,991,867	51,576,000	45 00	7 77	15,620,287	15,406,000
Barley	378,053	523,891	14 90	22 25	34,711,750	64,192,000	45 00	32 00	2,534,845	3,730,000
Rye	422,500	138,836	10 30	14 40	5,632,989	11,657,000	60 00	62 00	2,611,050	1,239,000
Flax	22,186	28,434	4 45	6 00	4,351,750	1,999,000	1 56	1 28	154,014	219,000
Mixed Grains	14,314	13,013	15 00	21 50	98,727	171,000	40 00	27 00	85,884	75,270
Peas	1,590	2,357	11 50	24 00	214,710	278,780	2 00	2 00	36,570	113,200
Beans	100	339	14 25	19 00	1,425	6,400	2 00	2 00	2,850	12,800
Potatoes	42,502	51,377	109 50	158 50	4,653,969	8,143,000	50 00	50 00	2,326,984	4,072,000
Turnips, etc.	9,289	8,202	173 50	153 50	1,611,641	1,259,000	30 00	30 00	483,492	378,000
					117,035,939	140,806,780				
Fodder Corn, Sunflowers	15,648	6,991	Tons	Tons	Tons	Tons	Ton	Ton	411,000	280,000
Hay, Clover, etc.	291,723	454,883	0 25	10 00	82,200	69,900	5 00	4 00	5 00	4,548,330
Alfalfa	26,539	30,000	0 80	1 00	234,400	454,833	16 00	10 00	3,750,100	630,000
Green Oats	1,220,000	755,651	2 20	1 75	58,400	52,500	15 00	12 00	876,000	11,331,760
Green Rye	181,070		1 25	1 50	1,525,000	1,133,476	12 00	10 00	18,300,000	
			1 25		226,300		12 00		2,715,960	
Alfalfa Seed					Lbs.		Lb.		35,000	
					100,000		35			
	10,005,609	8,803,121							\$100,542,204	\$ 82,794,360

Animals slaughtered and sold.	\$ 13,148,315	\$ 17,290,416
Dairy Products	22,950,000	25,500,000
Wool Clip	348,000	300,000
Game, Furs, etc.	2,000,000	1,500,000
Poultry and Poultry Products	9,000,000	8,470,000
Horticultural Products and Garden Stuff	2,000,000	1,600,000
Hides, Pelts, etc.	500,000	500,000
	\$150,488,519	\$137,954,776

LIVE STOCK, ALBERTA (FIGURES AS AT JUNE 15, 1922)

	Number	Value per Head		Value	
		1922	1921	1922	1921
Horses	863,316			\$ 34,532,640	\$ 36,660,400
Milk Cows	392,037			19,601,850	29,668,660
Other Cattle	1,243,005			37,290,150	50,062,740
Sheep	410,366			3,282,928	4,188,792
Swine	623,188			11,217,384	10,337,724
Poultry	5,121,699			5,421,699	4,534,042
Hens	337,336			1,012,008	850,038
Turkeys	89,724			224,310	208,407
Geese	86,536			108,170	78,517
Ducks					
				\$ 112,691,139	\$ 136,589,320

LIVESTOCK INDUSTRY IN ALBERTA

Statistical Table covering years 1917 to 1922, showing numbers and value of different classes of Farm Stock.

Year	Number of Live Stock and Poultry in Alberta						Value per Head						Value of Live Stock					All Classes Live Stock
	Horses	Milk Cows	Other Cattle	Swine	Fowl	Horses	Milk Cows	Other Cattle	Swine	Fowl	Horses	Milk Cows	Other Cattle	Swine	Fowl			
1917	148,312	375,861	1,999,133	1,669,666	290,336	3,763,312	860.00	\$89.50	\$64.25	\$11.50	\$24.50	\$41,099,020	\$29,083,000	\$77,706,000	\$17,708,000	\$171,612,000		
1918	291,216	375,202	1,562,880	3,371,960	601,531	3,027,333	70.00	93.60	70.00	15.00	24.00	55,387,220	30,569,000	95,402,000	14,437,000	200,778,220		
1919	300,380	336,596	1,712,118	3,611,198	113,838	4,176,328	60.00	89.60	60.00	14.00	25.00	48,022,800	29,957,000	71,847,000	11,146,000	169,075,800		
1920	241,831	305,602	1,700,331	3,831,121	186,336	2,992,853	60.00	71.00	15.00	10.00	18.00	94	14,511,060	21,698,000	47,265,000	5,158,000	174,725,660	
1921	216,510	213,838	1,330,361	3,933,599	821,312	4,963,568	40.00	48.00	28.00	6.00	13.00	86	36,660,400	20,312,000	49,448,000	7,188,000	111,207,900	
1922	263,316	397,037	1,213,008	410,366	633,188	5,933,323	40.00	50.00	30.00	8.00	18.00	34	53,640	19,601,850	37,290,150	3,283,928	117,691,139	

GRAIN PRODUCTION IN ALBERTA—1906 TO 1922
Showing Acreage under Cultivation, Yields, and Value. Department of Agriculture, Alberta, Publicity and Statistical Branch.

Year	Wheat			Oats			Barley			Rye			Flax		
	Area	Yield	Value	Average	Yield	Value	Average	Yield	Value	Average	Yield	Value	Average	Yield	Value
1906	1,000,000	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000
1907	1,000,000	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000
1908	1,000,000	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000
1909	1,000,000	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000
1910	1,000,000	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000
1911	1,000,000	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000
1912	1,000,000	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000
1913	1,000,000	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000
1914	1,000,000	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000
1915	1,000,000	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000
1916	1,000,000	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000
1917	1,000,000	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000
1918	1,000,000	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000
1919	1,000,000	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000
1920	1,000,000	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000
1921	1,000,000	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000
1922	1,000,000	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000	1.00	1,000,000	\$ 1,000,000

Source: Department of Agriculture, Statistical Branch Report.

TABLE SHOWING THE AVERAGE YIELDS OF GRAIN PER ACRE, IN THE VARIOUS CONSTITUENCIES,
PROVINCE OF ALBERTA, FOR THE YEAR 1922

Also showing the Average Yield per Acre for a Period Covering Thirteen Years 1910 to 1922.

Figures compiled from 'Threshers' Returns.

Yields shown in bushels per acre.

Constituency	Crop Dist.	Spring Wheat		Winter Wheat		Oats		Barley		Rye		Flax	
		1922	13 yrs. 1910-22	1922	13 yrs. 1910-22	1922	13 yrs. 1910-22	1922	13 yrs. 1910-22	1922	13 yrs. 1910-22	1922	13 yrs. 1910-22
(Crop District No. 1.)													
Medicine Hat		9 25	12 73	7 10	16 72	19 20	24 85	9 15	17 57	9 60	14 10	4 05	5 68
*Warner		12 60	14 88	8 10	15 48	19 00	25 40	10 70	15 90	9 10	12 46	3 90	6 41
*Lacombe		11 50	15 96	11 90	20 47	24 00	28 45	19 20	21 63	9 60	19 36	5 23	6 94
*Redcliff		7 90	12 62	4 00	17 74	15 00	23 50	15 30	16 22	8 15	15 37	5 60	6 54
*Bow Valley		12 70	19 85		17 82	30 30	37 43	23 75	24 13	8 40	16 90	8 75	7 63
*Homedale		6 60	15 59	5 55	19 07	9 00	26 89	8 90	20 08	5 55	14 87	2 65	6 48
*Arcadia		6 70	15 39	5 25	15 17	11 30	23 61	5 75	15 50	6 90	11 99	3 95	5 76
*Coronation		7 75	15 36	9 46	17 30	10 70	27 46	7 60	16 88	7 65	14 81		6 39
(Crop District No. 2.)													
Cardston		22 30	19 22	19 50	20 13	39 00	28 80	24 30	22 35	26 80	29 90	8 57	9 36
Pincher Creek		15 70	16 34	21 70	20 43	32 40	27 64	22 20	20 40	32 75	18 29	3 00	7 90
Macleod		12 70	15 54		20 73	26 00	30 02	25 80	22 06	13 00	15 89	4 00	10 94
Lethbridge		18 50	16 71		11 68	22 00	26 75	37 50	23 04	35 50	20 87		8 49
*Little Bow		12 40	20 37		18 95	24 20	32 30	11 40	20 56	9 60	15 46	4 62	7 32
Clareholm		21 40	19 24	17 50	20 57	38 00	31 11	22 00	21 10	19 50	18 69	9 60	10 57
Nanton		21 00	19 11	26 50	20 53	37 50	33 37	27 00	20 01	27 50	22 15		10 18
High River		20 20	20 77	35 00	23 07	38 80	35 43	32 00	22 77	17 70	20 40		9 17
Okotoks		19 50	21 83		21 07	40 30	35 02	30 30	24 45	18 68	20 90		8 64
*Rocky Mtn.		20 30	17 14	18 10	17 97	42 70	28 32	35 50	31 46	17 80	14 66		6 04
*Calgary		13 80	13 75		23 98	28 60	33 43	15 80	22 09	11 40	19 74		10 55
Gleichen		13 26	20 18	4 58	17 70	25 20	34 99	17 80	21 74	9 80	18 70	4 37	8 79
Cochrane		9 70	19 01	9 25	16 71	20 60	33 63	14 50	21 35	10 00	18 14		11 09

Settler	6.70	18.49	4.70	17.54	11.30	30.25	8.80	21.05	5.50	17.12	3.40	7.15
Camrose	11.40	20.21	13.30	20.12	15.60	32.58	9.70	23.44	9.10	18.50	5.10	7.71
Sedgewick	10.40	19.07	13.10	18.35	16.60	33.34	11.50	22.14	10.00	19.90	6.00	8.47
*Ribstone	9.50	16.82	8.85	14.49	15.70	28.71	10.70	17.81	7.75	14.83	4.90	7.42
*Wainwright	11.00	17.64	.....	18.66	15.90	30.86	9.70	20.14	7.70	14.82	5.00	7.44
Alexandra	12.60	19.67	.....	18.25	20.70	32.21	14.00	23.30	13.20	16.41	5.80	9.22
Vermilion	10.10	17.07	.....	19.00	15.80	32.14	11.00	21.33	8.90	17.28	8.33	8.55
Vegreville	14.70	19.61	13.20	21.03	20.50	33.36	14.50	23.42	10.50	16.75	7.00	12.07
*Whitford	15.80	22.30	8.45	17.05	20.25	30.90	17.50	24.51	13.70	17.11	7.00	12.09
*Beaver River	17.60	21.15	21.40	18.89	25.25	28.75	17.20	22.36	12.70	17.90	7.00	6.16
*St. Paul	17.90	20.04	.....	17.65	27.50	31.49	16.46	21.66	17.30	17.78	8.82	8.82
Dodlbury	9.15	20.29	.....	19.54	20.25	32.45	14.10	22.90	8.40	19.53	5.30	8.85
Olds	7.55	19.77	9.00	17.90	22.00	32.20	18.00	24.67	13.10	20.16	3.60	9.16
Imperial	11.30	21.55	.....	18.28	23.80	36.38	18.10	25.93	10.50	21.68	12.00	7.99
Red Deer	15.50	22.53	10.10	20.80	27.80	31.81	18.20	20.39	9.95	18.41	11.60	10.79
Lacombe	13.30	21.63	.....	22.14	24.00	34.83	10.80	25.93	10.60	20.09	6.66	10.55
Ponoka	10.50	22.39	11.00	18.22	21.75	34.36	15.40	27.09	12.50	18.46	10.19	10.19
Wetaskwin	11.60	22.33	.....	18.95	14.10	31.21	10.00	25.14	8.80	19.25	6.83	6.83
Leduc	13.20	21.71	7.80	19.81	15.40	29.57	13.00	24.17	8.50	16.83	6.00	12.19
South Edmonton	15.30	23.76	.....	22.53	18.50	36.46	12.90	28.60	11.20	17.76	11.58	11.58
Victoria	18.90	23.66	25.70	21.49	24.00	34.90	17.40	25.88	12.40	17.17	11.25	11.25
Sturgeon	14.00	25.08	.....	19.19	19.50	37.06	12.50	27.61	10.50	19.73	10.77	10.77
St. Albert	13.50	25.23	12.70	23.18	19.30	36.02	14.40	28.82	9.70	19.52	10.25	10.25
Pembina	14.50	19.95	26.60	20.50	21.70	32.27	11.20	21.71	8.60	19.11	8.00	10.74
Lat. Ste Anne	14.00	19.55	.....	21.86	23.60	31.24	17.60	24.29	14.00	17.26	6.00	9.59
Stony Plain	15.90	20.37	.....	17.17	18.50	31.80	14.70	25.01	15.30	19.05	10.43	10.43
*Edson	8.35	17.54	.....	10.50	25.00	28.13	8.60	22.65	19.00	20.29	12.00	12.00
Arborea	14.80	18.67	.....	23.56	24.70	31.04	15.30	25.19	12.60	14.78	3.40	7.64
*Grouard	9.40	22.02	19.80	25.69	18.40	47.17	21.20	26.18	21.40	21.44	6.19	6.19
*Charawoot	16.30	21.59	.....	.....	32.50	32.89	18.30	26.23	22.50	19.44	3.40	9.40
Peace River	10.90	24.99	.....	28.17	19.50	40.71	11.70	24.58	13.60	31.52	3.40	9.40

Constituencies marked * show average over ten years.

SUMMARY OF THE ACREAGE AND YIELDS OF THE LEADING GRAINS
DURING THE LAST TEN YEARS

	Year	Crop Area in Acres	Total Yield in Bushels	Yield per Acre	Average Yield
Spring Wheat ...	1922	5,701,041	64,991,867	11.40	17.67
	1921	4,564,290	51,576,000	11.30	
	1920	4,035,003	82,712,738	20.50	
	1919	2,827,935	33,935,224	12.00	
	1918	3,018,371	23,090,544	7.65	
	1917	2,622,853	51,865,839	19.00	
	1916	1,549,075	41,163,471	24.18	
	1915	1,637,122	58,830,704	35.93	
	1914	989,561	15,102,083	15.26	
	1913	1,043,114	20,360,104	19.51	
Winter Wheat ...	1922	64,554	748,826	11.60	19.42
	1921	85,114	1,468,000	17.25	
	1920	37,990	712,777	18.76	
	1919	38,475	639,450	16.62	
	1918	44,065	660,975	15.00	
	1917	51,704	1,023,173	20.00	
	1916	18,663	447,475	23.89	
	1915	31,954	1,257,985	39.37	
	1914	49,930	837,204	16.77	
	1913	83,719	1,250,129	14.93	
Oats	1922	1,614,500	34,711,750	21.50	33.95
	1921	2,139,743	64,192,000	30.00	
	1920	3,089,757	115,079,241	37.25	
	1919	2,329,025	65,725,085	28.22	
	1918	2,651,548	60,322,717	22.75	
	1917	2,667,291	85,726,170	32.14	
	1916	1,394,927	60,798,239	43.78	
	1915	1,570,596	90,582,694	57.66	
	1914	1,147,382	34,597,117	30.15	
	1913	1,221,450	44,078,325	36.09	
Barley	1922	378,053	5,632,989	14.90	23.99
	1921	523,891	11,657,000	22.25	
	1920	480,666	12,740,071	26.50	
	1919	412,212	10,562,406	25.50	
	1918	470,073	7,756,204	16.50	
	1917	462,726	9,984,789	22.56	
	1916	297,967	8,477,232	28.64	
	1915	374,062	12,761,187	34.11	
	1914	340,992	7,847,640	23.01	
	1913	333,462	8,645,812	25.92	
Flax	1922	22,186	98,727	4.45	7.20
	1921	28,434	171,000	6.00	
	1920	103,689	725,910	7.00	
	1919	47,112	221,897	4.71	
	1918	95,920	479,600	5.00	
	1917	139,527	777,690	5.60	
	1916	43,361	574,700	12.43	
	1915	41,243	569,762	13.57	
	1914	41,656	207,115	4.97	
	1913	96,445	779,653	8.29	

SUMMARY OF THE ACREAGE AND YIELDS OF THE LEADING GRAINS
DURING THE LAST TEN YEARS—(Continued)

	Year	Crop Area in Acres	Total Yields in Bushels	Yield per Acre	Average Yield
Rye	1922	422,500	4,351,750	10.30	19.01
	1921	138,836	1,999,000	14.40	
	1920	160,959	3,419,969	21.25	
	1919	83,032	1,173,256	14.13	
	1918	47,877	825,875	17.50	
	1917	29,997	764,828	26.00	
	1916	10,134	212,503	23.25	
	1915	12,067	291,399	24.14	
	1914	14,623	261,843	17.90	
	1913	17,452	370,661	21.24	
Mixed Grains....	1922	14,314	214,710	15.60	25.88
	1921	13,013	278,780	21.50	
	1920	8,398	258,238	30.75	
	1919	26,000	942,500	36.25	
Hay	1922	291,723	234,400	Tons 0.80	1.05
	1921	454,883	454,883	1.00	
	1920	433,296	476,626	1.10	
	1919	403,333	524,462	1.30	

COMPARATIVE TABLE SHOWING PROVINCIAL AVERAGES OF GRAIN YIELDS IN ALBERTA, FOR VARIOUS PERIODS, FROM 1899 TO 1922

Class of Grain	Average 1922	Average 13 year period 1910 1922	Average 12 year period 1899 1910	Average 23 year period 1899 1921
Spring Wheat	11.40 bush.	19.52 bush.	17.64 bush.	17.77 bush.
Winter Wheat	13.00 bush.	19.30 bush.	21.46 bush.	20.89 bush.
Oats	22.00 bush.	31.71 bush.	33.90 bush.	34.25 bush.
Barley	16.50 bush.	22.81 bush.	25.88 bush.	25.46 bush.
Rye	10.25 bush.	18.17 bush.	18.01 bush.	18.33 bush.
Flax	4.00 bush.	8.87 bush.	7.41 bush.	7.43 bush.

PRECIPITATION AVERAGES, ALBERTA, COVERING THIRTY-EIGHT YEARS 1885 TO 1922

	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894
Banff						9.91	10.44			
Calgary		7.28	10.15	12.40	5.88	10.70	8.93	5.47	6.88	8.49
Edmonton	10.30	6.53	9.48	15.88	6.48	19.30	15.63	11.43	12.34	12.27
Medicine Hat	8.02	5.47	8.43	11.98	6.08	7.79	9.70	7.81	9.08	10.09

	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
Banff	12.28	15.86	28.40	20.58	26.34	23.30	19.27	30.59	24.80	14.80
Calgary	10.76	16.05	20.58	16.21	26.15	17.57	22.31	34.57	22.77	18.89
Edmonton	10.77	15.24	14.54	10.90	24.09	27.80	27.83	20.66	21.06	19.87
Medicine Hat	11.39	18.18	17.25	15.90	22.28	22.05	20.80	13.68	9.90	9.70
Macleod		12.73	12.69	13.58	19.74	10.08	12.21	10.48	9.73	5.34
Lethbridge								23.13	14.82	11.42

	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914
Banff	16.00	14.88	23.54	21.05	21.56	16.32	19.17	19.07	16.37	17.69
Calgary	14.12	16.24	14.96	18.25	16.03	12.03	19.99	20.14	17.38	17.71
Edmonton	15.56	13.48	16.62	17.89	14.30	14.43	20.67	20.18	19.55	25.29
Medicine Hat	8.99	11.62	6.96	9.67	9.80	6.45	16.04	9.78	12.65	12.17
Macleod	11.63	20.82	12.40	18.11	16.05	8.57	24.34	12.71	17.49	20.50
Lethbridge	13.78	22.48	15.50	16.16	11.69	5.66	22.16	13.21	14.17	17.58

	1915	1916	1917	1918	1919	1920	1921	1922
Banff	23.36	25.24	19.28	18.19	14.68	18.96	18.27	
Calgary	18.24	13.91	11.44	9.12	12.21	14.42	13.50	10.63
Edmonton	18.64	20.92	15.25	17.86	16.43	18.16	15.22	13.73
Medicine Hat	16.13	17.90	13.42	10.20	7.66	10.74	12.83	11.34
Macleod	16.57	24.45	14.48	9.70	12.39	15.00	13.46	16.50
Lethbridge	17.40	25.88	11.93	8.94	13.36	14.05	12.13	13.22

HOURS, BRIGHT SUNSHINE, ALBERTA, FOURTEEN YEARS, 1909 TO 1922

	1909	1910	1911	1912	1913	1914	1915
Edmonton	2179	2093	2120	2044	1963	2049	2205
Lethbridge	2544	2419	2281	2358	2489	2465	2290
Lacombe	2341	2398	2181	2021	2444	2056	1930
Medicine Hat	2280	2066	2166	2069	2167	2304	2333
Ft. Vermilion		1846	1891	1977	2092	2318	2220

	1916	1917	1918	1919	1920	1921	1922
Edmonton	2066	2199	2287	2163	2171	2213	2105
Lethbridge	2298	2269	2433	2334	2316	2322	2147
Lacombe	1940	2113	2128	2041		2138	2157
Medicine Hat		2231	2331	2550	2325	2380	2326
Calgary							1984
Vermilion			2060	1967	2482	2413	2045
Ft. Vermilion	2309	2369	2091	1933		1896	2072

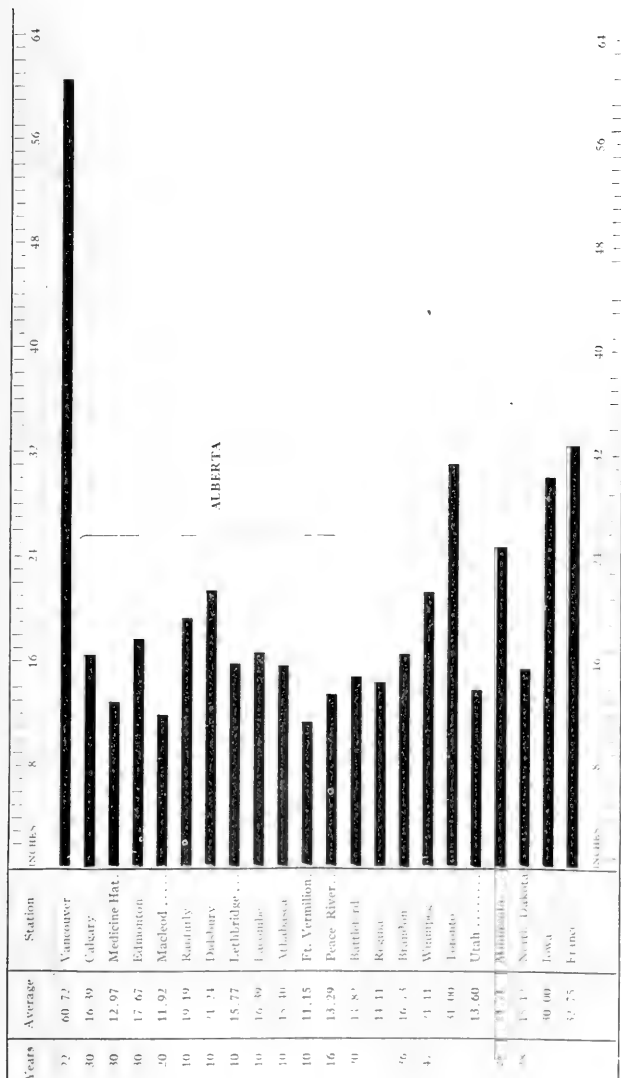
MAXIMUM AND MINIMUM TEMPERATURES AND PRECIPITATION, ALBERTA, FOR 1922

STATION	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year's Precipitation	Hours' Sun- shine
Lethbridge.....	Max. Min. Prec. 46 -27 6.43	43 -31 0.41	58 -11 0.81	63 8 2.57	84 28 0.89	88 38 1.87	85 28 3.18	92 38 0.40	88 34 0.81	74 21 0.78	67 -9 0.47	53 -34 0.60	Inches 13.22	2147
Medicine Hat.....	Max. Min. Prec. 45 -24 0.53	42 -30 0.58	58 0 0.32	75 10 1.54	95 32 1.38	93 40 2.44	99 44 1.15	99 44 1.08	93 37 1.45	75 16 0.64	62 -3 0.32	51 -38 0.71	11.34	2326
Ronolane.....	Max. Min. Prec. 45 -27 0.37	42 -33 0.84	59 -4 1.10	77 19 2.48	89 31 0.80	91 39 1.73	92 40 2.14	95 38 0.42	90 32 0.76	70 16 0.86	62 -3 0.30	53 -41 0.65	12.45	....
Macleod.....	Max. Min. Prec. 46 -28 0.40	42 -32 0.65	55 -12 1.20	71 10 6.18	86 30 0.43	89 36 1.61	93 43 3.41	90 43 0.56	86 30 0.66	75 22 0.58	59 -7 0.15	52 -46 0.67	16.50	....
High River.....	Max. Min. Prec. 51 -32 0.60	42 -36 1.05	51 -20 0.95	67 6 4.73	84 20	85 30 2.88	89 32 0.43	90 43 1.12	84 25 1.30	74 14 0.28	64 -11 0.45	49 -35 0.60	(a) 14.49	....
Calgary.....	Max. Min. Prec. 53 -26 0.33	47 -26 0.18	52 -15 0.51	73 10 1.61	83 26 0.41	90 32 1.91	91 38 1.99	95 38 1.42	88 29 1.55	73 15 0.24	65 -3 0.19	54 -30 0.29	10.63	1984
Bassano.....	Max. Min. Prec. 49 -28 0.43	38 -29 0.83	52 -18 1.15	73 16 2.46	86 33 0.56	89 36 1.56	93 42 0.32	97 45 0.62	89 33 0.81	69 18 0.67	61 -4 0.27	50 -26 0.80	10.48	....
Olds.....	Max. Min. Prec. 50 -29 0.35	40 -34 0.65	45 0 0.25	66 11 2.51	80 24 0.66	87 31 1.28	85 34 1.66	90 37 3.88	83 29 0.90	74 17 0.60	60 0 0.25	54 -32 0.72	13.71	....

Lacombe.....	Max. Min. Prec.	50 -41 0.91	43 -37 0.24	51 -16 0.30	69 14 1.07	82 20 1.30	89 56 1.75	87 33 1.88	93 33 2.94	89 25 0.84	76 10 0.52	62 -10 0.02	55 -36 0.67	2157 12.44
Edmonton.....	Max. Min. Prec.	47 -50 0.75	44 -32 0.87	52 -11 0.57	72 10 1.50	82 29 1.28	90 28 1.05	88 39 1.73	93 36 3.50	85 28 0.77	69 11 0.84	52 -5 0.23	42 -29 0.64	2105 13.73
Red Deer.....	Max. Min. Prec.	50 -43 0.83	35 -35 0.20	50 -15 0.40	67 15 1.11	85 23 1.42	90 28 1.41	88 35 2.28	94 34 2.58	84 27 1.31	73 12 0.40	56 -7 0.10	32 -35 0.17	12.25
Stettler.....	Max. Min. Prec.	43 -30 0.50	39 -30 ...	55 -17 0.25	69 14 1.53	73 25 1.51	75 27 1.84	80 35 1.70	79 33 1.80	71 28 0.39	62 20 0.55	59 0 0.10	47 -30 ...	(a) 10.17
Vermilion.....	Max. Min. Prec.	42 -46 0.25	28 -38 0.29	47 -11 0.50	73 10 0.15	85 29 3.16	90 21 2.70	90 35 1.33	92 32 2.51	87 28 1.30	70 11 1.43	55 -11 0.03	43 -38 0.60	2045 14.31
Athabasca.....	Max. Min. Prec.	48 -52 1.00	44 -48 0.90	55 -24 0.50	77 5 0.75	84 25 2.98	92 20 0.58	86 31 1.26	88 29 2.40	81 27 0.83	68 4 1.01	51 -9 0.48	44 -40 0.75	13.44
Peace River.....	Max. Min. Prec.	44 -41 0.16	21 -50 0.60	51 -25 0.65	52 15 0.05	85 28 1.32	89 27 1.06	83 36 0.67	81 29 6.78	67 25 0.00	60 15 0.26	46 -15 0.10	28 -36 0.40	6.05
Ft. Vermilion.....	Max. Min. Prec.	41 -50 0.12	29 -48 0.28	47 -20 1.20	69 -23 0.00	84 28 2.43	86 34 2.53	88 31 0.88	84 38 3.03	71 25 2.13	64 13 0.54	43 -34 1.10	13 -43 0.60	2072 14.84
Edson.....	Max. Min. Prec.	47 -40 0.70	51 -34 0.38	58 -19 0.90	74 17 1.40	85 21 1.41	86 26 0.82	87 35 1.67	88 33 1.02	80 25 1.23	71 12 1.27	57 -5 0.52	46 -32 0.60	11.92

(a)—Returns incomplete.

AVERAGE ANNUAL PRECIPITATION



Report of the College of Agriculture for the Year 1922

H. A. CRAIG,

Deputy Minister of Agriculture.

SIR,—

Herewith is submitted the annual report of the College of Agriculture for the year 1922.

The enrolment of students in the College of Agriculture for the year 1922 was as follows:

Spring Term:

First Year.....	36
Second Year.....	13
Third Year.....	8
Combined Course—Arts and Agriculture.....	13
Total.....	<hr/> 70

Fall Term:

First Year.....	27
Household Economics (Girls).....	6
Second Year.....	28
Third Year.....	12
Combined Course—Arts and Agriculture.....	11
Graduate Course.....	3
Total.....	<hr/> 87

Two short courses in dairying for professional dairymen were held during the winter.

The above statement of enrolment marks an increase in attendance despite the prevailing adverse conditions. Our students are practically all from country homes, and a fair percentage intend to continue farming.

Of the seventy-three students in the three-year-courses practically all have come through the Schools of Agriculture. A small number of these would have been well advised to secure further foundational education before entering the University, the general tendency of such in the University being to elect to take the degree in four years rather than in three.

Our present senior year has shown a decided tendency to specialize in field husbandry or soils. In this final year we allow a choice of subjects that will enable a student to major in the direction of the work that interests him most—this is detailed in the University calendar. Last year several of our graduates majored in animal husbandry; this year but two out of the twelve have followed this course. This is simply an indication of the variation in interests in the different years.

It will be noted that there are six students entered for the degree of B.H.Ec. These girls are from the Schools of Agriculture, this part of the domestic science work being under the direction of the Faculty of Agriculture.

DEPARTMENT OF HORTICULTURE

The permanent planting of shrubs and trees in the grounds came through the winter with little loss. In the trial plots the same was true with regard to the trees and bush fruits, shrubs, hedges and all but one or two of the perennials. Winter killing was the most severe in seven years with strawberries, ten varieties were killed outright, of five only a few plants were left. The heavy losses were due without doubt to the fact that owing to the dry fall many of the runners did not root and of course died. The mother plants having to support these runners were drained and they too succumbed.

The spring was favorable but dry, a good showing of bloom was made and a normal amount of currant and raspberry fruit set. Plums were cut off by a late frost. Two varieties of crab-apples fruited a few apples on each of three trees. Currants and raspberries made about a half crop on account of the dry weather.

In all some 100 varieties of flowers were grown side by side for comparative and instruction purposes. These gave the poorest showing ever made, until the early fall, when favorable growing weather and absence of frost produced a wonderful display. Seed was saved from choice plants of some fifty varieties.

DEPARTMENT OF POULTRY

Our students have received practical courses in poultry at the Schools of Agriculture, and for that reason the absence of a professor of poultry husbandry has not been such a serious matter. Certain instruction was given in good marketing, but as yet no organized course has been established. There is room for considerable research work in this department.

DEPARTMENT OF DAIRYING

The department of dairying is in a position now to do valuable work. Its quarters are temporary, but the equipment is good as far as there is room for it. The professor of dairying reports as follows:

"I have to report that, in addition to the academic work put on by the department of dairying, short courses were provided in the latter part of April and early in May last for the purpose of special training and examination of candidates for the provincial cream grading service, established for the first time. I was assisted in the work by provincial dairy instructors. The course consisted in lectures and laboratory practice covering the special phases of the work which were about to be initiated by the Provincial Department of Agriculture under the dairy commissioner's direction. Twenty-nine students were in attendance from various parts of the province and the courses extended from April 26th to May 5th. A special short course was also put on at Calgary in connection with the same work and under the writer's direction, here nine students were in attendance, making a total of 38 at Edmonton and Calgary."

Our plans are made to erect a fully equipped dairying building as soon as deemed practicable. There is a pressing need for such a plant, not only to give instruction to students, and in short courses, but to put under way certain research work which can be carried on only at such a place and by specially trained men.

We are much indebted to the dairy branch of the Department of Agriculture for assistance in laboratory work, with our regular classes and particularly during our short courses.

DEPARTMENT OF AGRICULTURAL ENGINEERING

Outside of giving the regular course laid out for our students the Professor of Agricultural Engineering has carried on the following activities:

Lecture courses for (a) Soldiers' Settlement Board; (b) International Harvester Co.; (c) Short Course at Red Deer; (d) Farm Young People's Classes at the University; (e) University Week at Monitor.

Besides the above lecture work the Professor of Agricultural Engineering has been called upon to go as referee in cases involving legal differences in regard to machinery, and he has done considerable work in advising with several men as to the laying out of farmsteads, and the erection of buildings.

Special attention might be called to the address given at the Convention of the Alberta Agricultural Fairs Association on the question of "The Plowing Match and Its Value." Considerable interest was aroused at this meeting and a request was made to have a bulletin published. This was done accordingly in co-operation with the Department of Agriculture and as a result the head of the department judged at plowing matches held at Lamont, Vermilion, Rochester and Lacombe. The matter of good plowing in the general scheme of good farming has become better recognized through this influence.

Acknowledgment is made to the different agricultural implement companies that have contributed so generously to equipping the agricultural engineering laboratory. A visit to this laboratory proves very interesting and instructive. We need more floor space for this very purpose and when the time comes that a building is erected, the collection of all types and forms of agricultural machinery will be one of the most interesting features of our laboratory work.

DEPARTMENT OF ENTOMOLOGY

This new department is just getting well under way. We had planned to use a good part of the summer in survey work which would permit the collection of class-room material. This we have been unable to do because of the serious menace to agriculture from the grasshopper plague. Our Professor of Entomology directed the carrying out of the field campaign put on by the

Department of Agriculture to combat this menace, and spent practically all of his summer at this work. It is hoped that more time will be found available during the coming season.

Acknowledgment is here made to the Department of Agriculture for the collection of insects which has been donated to the University for entomological laboratory work.

A very real need for such services as our Professor of Entomology is able to give is already manifest, requests for articles in periodicals, and queries from individuals all over the prairie provinces are now making quite a demand upon this department.

DEPARTMENT OF SOILS

The staff of the Soils Department was strengthened during the year by the addition of Dr. J. D. Newton and Mr. T. H. Mather. Two parties were equipped and sent into the field during the latter part of May. Up to the present time the field work in connection with a preliminary soil survey of approximately 216 townships representing about five million acres has been completed. Of this amount about twenty townships or approximately 460,000 acres were surveyed during the summer of 1921. The remainder, about four and a half million acres, was surveyed during the past summer by the two parties which were in the field about five months.

The above area occupies a strip of territory forty-eight miles wide between Macleod on the south, Nanton on the north, and the foothills on the west, and extends eastward to the boundary line between Alberta and Saskatchewan.

In addition to the above area nine townships, including and surrounding the Remount Reserve in range 3, townships 20, 21 and 22 were surveyed. A report and a map of this area will be presented to the Department of Agriculture during the coming legislative session.

A report on the Macleod sheet or the area between townships 8 and 17 and ranges 16 and 27 including soil map showing the area and location of soil types and their descriptions, together with mechanical and chemical analyses of the various soil types will be published in the near future. The chemical analyses, including the determination of nitrogen, phosphorus, calcium, magnesium, moisture and inorganic carbon for about sixty per cent. of the samples from the Macleod sheet have been completed. Before the report can be published, however, it will be necessary to complete the analyses of the remainder of soil samples from this area, together with the potassium determination for the entire sheet. No potassium determinations have as yet been made owing to the fact that we were not equipped for this work. The equipment for this work has recently been provided. Analyses for the Medicine Hat sheet will be continued during the coming summer.

The department has also spent considerable time determining the nature and the amounts of the alkali salts in soils from certain districts of this province. Such determinations have been made upon about one hundred and fifty samples of soil and water.

Many miscellaneous samples submitted by farmers have been analyzed and reports rendered.

The heavy demand for laboratory work has made it necessary to extend laboratory facilities and we have recently equipped another research laboratory together with adding certain apparatus to our original laboratories.

Acknowledgment is here made of the fact that the Department of Agriculture has borne the cost of the field work of our soil survey.

DEPARTMENT OF ANIMAL HUSBANDRY

Horses:—

The number of horses maintained by this department includes thirteen purebreds made up as follows: Six Belgians, five Percherons and two Clydesdales. In addition there are six grade work horses and three others that are used for lighter work. Two of the Belgian mares and one of the Percherons produced foals during the year.

With the completion of the new horse barn a year ago we are now in a position to provide suitable accommodation for our horses. While no experimental work has as yet been started in connection with this class of stock, it is hoped that as our supply of younger horses increases, work of such a nature will follow.

Beef Cattle:—

The purebred breeding herds are represented by Shorthorns: Sixteen head females and the herd sire. Herefords: Six cows and heifers, together with two bulls. Angus: Six females. In the purebred steer herd is included: Eight Herefords, five Shorthorns, five Aberdeen Angus and one Galloway. In addition there are six grade and cross-bred steers and heifers. A total of sixteen head of nurse cows with their calves complete the beef herd.

In connection with the experimental steer feeding work 72 steers varying in age from calves to two-year-olds were purchased in November and are being carried over until March or April.

Dairy Cattle:—

Due to the fact that there is not as yet a suitable building to take care of a large herd of dairy stock the development of this particular class of cattle has not been pushed to the same extent as the beef herd. In Holsteins we have 17 females and four males. The Jersey herd consists of 14 females and one bull. It is hoped that during the next year a start may be made in the establishment of a small herd of Ayrshires.

Sheep:—

A comparatively large flock of sheep is kept on the University farm. This is justified from two main standpoints: Considerable experimental work is being done in connection with the various problems relating to sheep husbandry, and in order to conduct

this work satisfactorily a considerable number of grade ewes is necessary. There is a fairly keen demand for breeding rams which can very well be supplied from the increase in the purebred flock. The purebred flock consists of: Hampshires, 46; Suffolks, 15; Leicesters, 14; and Shropshires, 10. In addition there are approximately 150 head of grade ewes.

Swine:—

In connection with swine the major breeding work is being carried on with Berkshires and Tamworths. A few Duroc Jerseys, and Poland Chinas are maintained for class-room work. The Berkshire herd includes 35 head of which 26 are sows and gilts. Tamworths consist of 35 females and four boars. A reasonably large number of grade and cross-breds are kept for experimental feedings. On hand at present there are about 130 head of these.

EXPERIMENTAL WORK FINISHED IN 1922 AND NEW TRIALS THAT ARE BEING CONDUCTED

From the results of the experiments completed in 1922 valuable data were secured. This is of great importance to the live stock industry of Alberta as well as throughout the Dominion and United States. The information secured from these experiments, together with others will be published by the University whenever sufficient data are secured to warrant definite conclusions to be made.

Feeding Beef Steers (Expt. 32):—

The steer feeding experiment completed April 21, 1922, was along similar lines with the trial completed in 1921. The data secured from the lots fed oat silage, and sunflower silage coincided with the results of the previous experiment.

Swine Feeding Experiments:—

In the fattening of early fall pigs (Expt. 31) during the winter it was found that there was little or no difference in the feed requirements when compared with the fattening of spring pigs. Due, however, to the higher price of pork in the spring, a greater profit was secured from the raising and feeding of fall pigs than spring pigs.

In the brood sow feeding experiment (No. 36) additional data were secured on the following problems: (1) The influence of feeds on the production of hairless pigs; (2) To compare the effects of oats and barley and mixtures of them when fed to pregnant sows; (3) To compare the practice of breeding gilts with aged sows for economy, size of litter, and condition of offspring.

Statistics are also being compiled for the cost of feeding sows, raising spring pigs, raising fall pigs on pasture and without pasture.

Sheep Feeding Experiments:—

Three years' work on roughages for pregnant ewes has been completed. Nine separate rations including four of the common hays have been compared when fed to pregnant ewes. The effect of these rations on the ewe during pregnancy and on the condition of the lambs was studied. The results will be of great value to sheep breeders of the province, and will be published in Bulletin 1 of the College of Agriculture.

EXPERIMENTS CONDUCTED DURING THE WINTER OF 1922

Steer Feeding Experiment:—

A new problem has been undertaken in the present experiment. Due to the market demand for steers weighing between 1,000 and 2,000 pounds, and the premium paid for baby beef, it seemed advisable to include in the experiments three lots of steers, one lot being calves, one lot yearlings and one lot two-year-old steers. The data from these three lots will show the rapidity of gains, economy of gains, and profit of steers fattened at the various ages.

Sheep Feeding Experiment:—

The pregnant ewe experiment is being conducted along slightly different lines, since the comparison of roughages has been completed. Since oat hay proved to be a poor roughage for feeding pregnant ewes, various supplements have been added to oat hay to determine whether or not these supplements will supply the deficiencies of oat hay. The comparison of oat silage and sunflower silage is included in the present experiment to note the effect on the ewes and offspring.

Data are being secured on comparing the practice of breeding ewe lambs with that of breeding yearlings.

Swine Feeding Experiment:—

In order to obtain further information, experimental work relating to the following questions is being carried on this year: (1) The relative cost of raising fall and spring litters; (2) Various grain mixtures for wintering growing pigs; (3) Cooked vs. uncooked feeds; (4) Feeding value of cooked potatoes; (5) Indoor vs. outdoor use of self-feeder; (6) Use of potassium iodide to prevent hairless pigs; (7) A comparison of the breeding capacity of gilts and aged sows.

FEEDERS' DAY

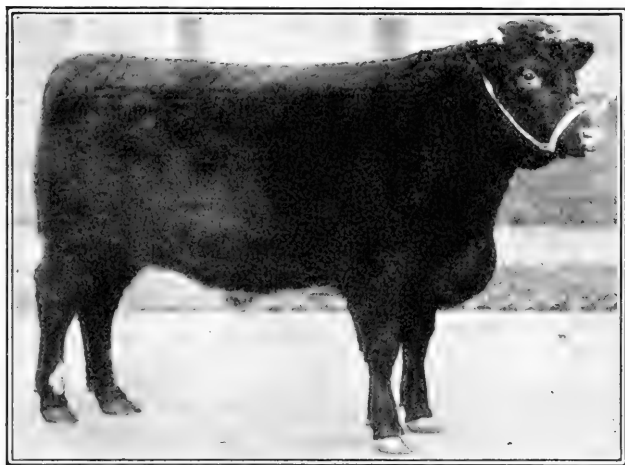
The first feeders' day conducted by this department was held on April 21st, 1922. The object of this gathering was to give the live stock men and farmers generally an opportunity to get into closer touch with the results of the various feeding trials carried on at the University and to discuss other live stock questions confronting the live stock breeders of this province. Approximately

125 were in attendance including farmers, packers, live stock commission men, investigators, representatives of the Dominion and Provincial Department of Agriculture and representatives of the different agricultural journals.

STEER EXHIBIT

Two years ago the University in co-operation with the leading live stock breeders of Alberta made its first exhibit at Chicago and Guelph Fat Stock Show.

This year another group of steers, for the most part donated by the breeders of the province to the University was shown at the Royal Show in Toronto, the International at Chicago and the Provincial Winter Fair at Guelph.



"U. A. SUPREME"--GRADE SHORTHORN

Bred at University of Alberta, winning Shorthorn Special at Chicago, 1922.

Among the animals prominent in the winnings was R. A. Wallace's Galloway "Medallists Best," which was 1st champion at Chicago; the grade Shorthorn steer raised by the University, "U. A. Supreme," which won the Shorthorn special at Chicago; J. G. Clarke and Son's junior yearling Shorthorn, "Casalta Lovely Beau," which was champion at Toronto, and William Sharp's Shorthorn calf "Craigievar Mascot," which won a championship at Guelph.

IMPROVEMENTS

Each year sees considerable development and improvement in the way of new buildings, additional fences and clearing of land in connection with the farm. This fall we were able to grade

the lane running through the centre of the new farm which provides easy access to all the fields. Further progress was made in the way of fencing, 1,500 rods of new fence being put up last summer. This adds much to the general appearance of the new farm. In order to provide for additional accommodation for the herd of grade cows a frame barn 75 x 30 was erected just south of the large beef barn. The painting of the new horse barn, hog pen and sheep barn has very materially improved the appearance of these buildings.

In order to provide for sufficient exercise for the horses several new corrals were constructed just north and east of the new horse barn.

NEW STOCK PURCHASED

With a view of establishing a herd of Yorkshires at the University farm, four sows and a young boar have been purchased recently. These animals should prove a valuable asset to the herd and in addition to providing class-room material for our students will, in time, be a source of supply of breeding stock of this increasingly popular breed of hogs to the farmers of the province. A young Berkshire boar and an imported Suffolk ram complete the additions to our live stock for this year.

DEPARTMENT OF FIELD HUSBANDRY

Projects carried on include the following:

Testing Varieties of Wheat, Oats, Barley and Peas to determine whether our present varieties are suitable for our peculiar conditions in the park belt.

Testing Alfalfas, Sweet Clovers and Alsike Clovers for winter hardiness and general usefulness.

Testing of Sweet Clover in the open plains sections of the province to determine its drought hardiness.

Testing varieties and strains of Corn and Sunflowers.

Determining the relative suitability of Corn and Sunflowers in the Park Belt.

Selecting a Suitable Corn for such sections of the province as need a partial substitute for the bare fallow where it might be pastured or fed as ripe grain.

Growing Alfalfa for Hay and Seed. These tests have been under way for the past five seasons and the results will very shortly appear in a bulletin on alfalfa.

Growing Sweet Clover for Hay, Seed and Pasture. These tests are now available in a bulletin which has just been printed.

Seeding Red Clover, Sweet Clover and Timothy with a nurse crop of wheat, oats or barley. This project has been under way two years and therefore is not capable of yielding conclusive information.

A Study of the Native Grasses of Alberta with a view of utilizing the best of these in our agriculture.

Determining the Effect of Arrested Maturity of Oats upon their suitability for seed purposes. This project was referred to in our report in 1921, and is still in progress.

Determining the Precise Physical and Chemical Effects of Frost upon all kinds of seeds including wheat, oats, barley, flax and peas. As stated in 1921 this project is yielding valuable information.

Growing Sunflowers Successfully for Silage.

Silage Investigations.

(a) Suitability of various crops and mixtures for silage.

(b) Silage value of corn and sunflowers cut at different stages of maturity.

A careful analytical study, designed to show whether it would be profitable to sow large varieties yielding a heavy tonnage of immature plants.

Effect of Frequency Cutting of Pasture and Forage Crops on total yield of dry matter and nitrogen.

Relative Loss of Vitality in Storage of hulled and hull-less timothy seed. The object is to ascertain to what extent the seed trade is justified in discriminating against hull-less seed.

Growth of Corn and Sunflowers in relation to climatic conditions.

Winter Hardiness in Wheat and Other Crops. All theories advanced by previous workers as to the nature of cold resistance have been tested by a comparative study of a series of winter wheat varieties of known hardiness.

To Determine the Most Suitable Crops for Spring, Summer and Autumn Pasture for dairy cattle, calves, hogs. These tests will be reported upon in detail in bulletin form.

To Study the Effect on the Resulting Wheat Crop of periodic tillage during the growing season, also to determine the effect of tillage and intertillage on the moisture content of the various plots.

To Determine the Effect on Seed Production of Spring Pasturing of Winter or Fall Rye.

To Ascertain the Most Suitable Time to Plow Sod Land.

(a) To destroy the sod and prevent growth of grass in the succeeding crop. This applies to sods like Brome, Western Rye, Timothy and Mixed Hay.

(b) Surface cultivation necessary to decompose the sod for a suitable seed bed.

- (c) Conservation of moisture for the succeeding crop.

Testing Sunflowers, Oats and Corn as to their relative economic value as field crops for ensilage.

Rotations.—We do not know the order which the common farm crops should take in our cropping system. Tests now under way are intended to show their proper sequence. Forty-five rotations were laid down in the spring of 1919. These experiments cannot give returns of value for several years, although the results to date are interesting and suggestive.

Potato Projects:

- (a) Testing for suitable varieties for commercial selling.
- (b) Methods of growing potatoes.
- (c) Study of potato diseases, principally the common Scab.

CO-OPERATIVE WORK WITH FARMERS

During the past three years a very great deal of extension work with farmers in all parts of Alberta has been developed. This has been due to two things: (1) the direct call on the part of the farmers themselves for information concerning crop and seed production, and (2) the necessity of securing information on specific problems under conditions where the problem exists.

As a result three types of work have developed, namely: (1) Field experimental tests in crop production; (2) Experimental tests in seed; (3) Production of registered seed on a commercial scale.

Under the first heading many tests have been carried out in sweet clover, alfalfa, alsaswede red clover, corn, wheat, barley, oats and peas. Furthermore, very exhaustive co-operative tests have been carried out in potato production in the Edmonton and surrounding districts with definite and permanent results, particularly concerning the choice of a suitable variety of potatoes for commercial purposes. This work has been carried out three years in succession on eight different farms, and will be reported upon during the coming summer in the form of a bulletin.

Under seed tests, over 1,500 farmers have secured small samples of seeds representing new strains and varieties, for experimental testing.

Under No. 3, between 150 and 200 farmers are growing registered seed from stock seed secured from this department, and as a result some 100,000 bushels of registered seed is available from the crop of 1922.

DEPARTMENTAL ORGANIZATION

During the last five years many projects have been carried out in the field husbandry department, many of which will admit of a publication of results, and may, therefore, in some cases be concluded, whereas others will be carried on still for a number of years.

A number of new projects will be undertaken to take the place of old projects, during the coming season. Some of these new projects, e.g., winter hardiness, are an outgrowth of work that has been under way during the last five years, and will be studied almost wholly in the laboratory.

The organization of the department during the last five years has been along three main divisions, namely cereal crop, forage crop, and potato and root crop investigations. In view of the necessity for greater specialization along more particularly biochemical, physiological and plant breeding lines, it has seemed best to reorganize to some extent, with a view to enabling this department to do more efficient work. Consequently, with the beginning of 1923 the work of the department has been organized as follows:

- (1) Farm crops, in which all of the field experimental work on crops will be included.
- (2) Plant genetics and breeding, in which all plant breeding work in all crops, together with certain studies in agricultural botany, ecology, cytology and genetics will be carried out.
- (3) Plant biochemistry and physiology, in which such studies as silage investigations, winter hardiness and other scientific studies in biochemistry and physiology will be undertaken.

PUBLICATIONS

A number of publications (bulletins and circulars), will be made available during the year. Some have been published already and are out of print, but these will be revised for new issue. Our publications will be distributed through the University Department of Extension, where application should be made.

Respectfully submitted,

E. A. HOWES,

Dean.

Report of the Olds School of Agriculture

H. A. CRAIG,

Deputy Minister of Agriculture.

SIR,—

I have the honor to submit the annual report of the Olds School of Agriculture for the year 1922.

The following are the present instructors in the Olds School of Agriculture:

- F. S. Grisdale, B.S.A., Principal and Instructor in Agronomy.
- C. A. Weir, B.S.A., Farm Manager and Instructor in Animal Husbandry and Farm Management.
- G. R. Holeton, B.Sc., Mechanics.
- M. W. Malyon, B.S.A., Science.
- R. M. Scott, B.A., English, Mathematics and Poultry.
- C. H. H. Sweetapple, V.S., Veterinary Science.
- A. T. Kemp, B.S.A., Biology.
- A. I. Lammiman, Sewing.
- D. Houston, B.Sc., Cooking.
- M. A. K. Blain, Household Administration and Sanitation.

The following special lecturers gave instruction at the School during the term:

- C. C. Weatherby, Blacksmithing.
- W. J. Beckett, Dairying.
- J. Gaetz, Dairying.
- G. E. Halpenny, R.N., Home Nursing.

REGISTRATION

The total registration at the O.S.A. since its inception is 1249. Students are allowed to enter the School without any entrance requirements other than that they must be able to read and write. This arrangement has many advantages as it allows many bright but poorly trained young people to enter our classes and obtain an education that they could not readily get in any other place. It is interesting to note that 90 per cent. of the students who have been in attendance at the Olds School of Agriculture have come from the rural districts.

The work in the School may be dealt with under three headings: Instructional, Extensional and Investigational.

The School is maintained primarily for the purpose of providing instruction for the farmers, and in order to attract the people of very ordinary means as well as those who are in better financial circumstances, the courses are made free. The only expense incurred while taking the courses are for board and room, laundry and a small amount for books. We have had quite a number of students take the five months at a total cost of \$150.00. Any student should be able to take the five months' course at the present time with an outlay of around \$200.00. The courses in the School of Agriculture extend over a period of two winters of five months each. The term commences about the first of November

and ends the last of March each year. The instruction in both courses emphasizes those phases of the work that deal with the practical problems on the farm and in the home.

ENROLMENT

Each year's attendance at the Olds School of Agriculture since 1913-14 is as follows:

Year	First Year		Second Year		Total
	Men.	Women.	Men.	Women.	
1913-14	65	39	..	..	104
1914-15	69	19	23	8	119
1915-16	83	50	21	7	161
1916-17	56	53	19	7	135
1917-18	81	29	18	17	145
1918-19 (Influenza) .....	..	..	..	..	..
1919-20	85	38	28	8	159
1920-21	69	35	42	17	163
1921-22	49	18	31	16	114
1922-23	55	34	46	14	149
	927		322		1249

Of the total number of registered students, twenty-three have Olds as their address. This is the largest number of local men and women ever enrolled in one year. Eighty-eight per cent. of the student enrolment consists of men and women actually engaged in agriculture or from farm homes.

ACADEMIC STANDING

The data in the O. S. A. register shows that only twenty per cent. of the students who entered prior to 1922 had one or more years in a high school and that six per cent. of these had matriculated before entering the Agricultural School. The other eighty per cent. of the students who have attended the School have not had more than the public school grades or the equivalent before starting their course.

The grade standing of the students registered in 1922-23 is as follows:

Grade or Equivalent Number	V.	VI.	VII.	VIII.	IX.	X.	XI.
	2	8	10	61	36	13	20

SCHOLARSHIPS

The following special prizes were donated by the P. Burns Co., Calgary; City Dairy, Edmonton, and L. Phillips, Langdon, for the school year of 1921-22:

The P. Burns Co., Calgary, donated again last year \$25.00 in prize money to the first and second years in both Agriculture and Domestic Science. These prizes aggregated \$100.00. Mr. P. Burns has paid these prizes for the past seven years. The prizes add a very distinct value to the courses in the school and they are very much appreciated by both the students and staff of the O.S.A. In the Domestic Science branch the prizes are for practical work in sewing, cooking, laundrying and dairying.

GRADUATING CLASS

The graduating exercises were held in the assembly hall of the school on the evening of March 30th. The commencement address was given by Rev. H. H. Bingham, of Calgary. Twenty-six men and fifteen women received diplomas. About two-thirds of those receiving diplomas were recommended to the University for admission to the Agricultural and Domestic Science degree courses. On the opening of the University this fall, ten of the men and five of the women were found in the halls of learning.

The following is a list of the names and addresses of the students who were presented with diplomas at the 1922 closing exercises:

Agriculture

Bjorgren, Phil, Ferintosh	Malaher, Wilfred, Olds
Clutton, Andrew, Delburne	Mail, George A., Vancouver
Dahm, Hubert, Killam	Moritz, Earl, Olds
Devlin, Thomas, Olds	Manning, Erol, Amisk
Gibson, Andrew, Lacombe	McKee, Paul, Benalto
Graham, Fred, Olds	Recknagle, Roland, Wetaskiwin
Garrison, Ivan, Westlock	Suggett, C. A., Bentley
Hay, James, Elnora	Stephenson, Arthur, Elnora
Johns, Cyril, Calgary	Sawers, Leonard, Camrose
Johnston, S. C., Carbon	Thomsen, Carl, Dickson
Hutchings, Stewart, Kathryn	Thomson, L. B., Crowfoot
Lewis, Norman, Edmonton	Thompson, W. J., Shaunavon, Sask.
Lindemood, Harry A., Clive	Wilkinson, Morley, Clover Bar

Domestic Science

Campbell, Lilly, Olds	Kocker, Marian, Clive
Clutton, Rose, Delburne	Kershaw, Maria, Didsbury
Duff, Stella, Olds	Mundy, Anna, Loughheed
Davidson, Elizabeth, Delburne	McLean, Ruby, Millet
Dufva, Selma, Water Glen	McLean, Marguerite, Millet
English, Mona, Fleet	Redig, Jessie, Lacombe
Edgar, Bertha, Innisfail	Sherrer, Alice, Lacombe
Farnalds, Dorothy, Halkirk	

STUDENT ORGANIZATION

In the various organizations of the school, the students are able to round out their general course with the development of the athletic, social and literary side of college life. In this they are assisted by the members of the staff best suited in the various lines. Special care is taken to see that all students are given a chance to act on the society executive as training in leadership.

The Literary Society holds weekly meetings and special attention is paid to platform work and public addresses. Debates and public speaking form the central items of the program. These are balanced with music and recitation numbers. The school paper, "The Chinook," is edited by the various classes in turn, and is both instructive and amusing.

The debates were a boon to the school from the educational standpoint in aiding the development of the literary side of the

work. They also tended to promote friendly competition between the schools and brought them into a closer touch with one another. Benefits came, not only to those students who actually took part, but were an education to the whole student body.

MAGAZINE

The students of the School of Agriculture in publishing the O. S. A. magazine again in the school year of 1921 and 1922 concluded the seventh effort in this line. There are one thousand copies of this magazine issued each year at an expense of approximately five hundred dollars. The magazine not only supplies the students with a record of their activities during the school year and gives them, through contributed articles, some information on various phases of rural problems, but also furnishes the O. S. A. with the best kind of publication for advertising purposes.

EXTENSION WORK

The Alumni Association:—

The O. S. A. Alumni Association is now a very vigorous part of the Olds School of Agriculture. On Jan. 3rd, 1923, the seventh annual winter meeting of the association was held in the School of Agriculture. The program at this meeting was extensive and of a high standard of excellence. There were over two hundred in attendance at the sessions. Addresses were heard from Hon. Geo. Hoadley, Minister of Agriculture; Hon. Mrs. Parlby, Minister without Portfolio; Mr. H. A. Craig, Deputy Minister of Agriculture; W. J. Elliott, U. G. G., Calgary; W. J. Stephens, Field Crops Commissioner, Edmonton; Dean E. A. Howes, University of Alberta, Edmonton, and the following three M.L.A.'s: N. S. Smith, Olds; A. B. Claypool, Didsbury, and D. Cameron, Innisfail.

The various committees were active throughout the day presenting resolutions of different kinds to the association for consideration. The two most outstanding and praiseworthy decisions yet made by the association were decided on at this year's meeting. The first of these very important matters calls for the holding of a 1923 summer re-union at the O.S.A. covering a period of one and a half days on Thursday and Friday of the third week in July. This longer period allowed for the summer re-union will permit the holding of decisions on problems confronting the members and will also allow a longer period of time for the visitors to inspect and gain information from the experiments under way at the school station. The second very important decision made at the 1923 winter meeting of the O. S. A. A. A. was the most lofty and inspiring yet concurred in by the organization. This decision calls upon the members to raise a large sum of money for the erection of a "Memorial Gymnasium Hall" on the O. S. A. campus in honor of the boys of the O. S. A. who fell and those who served in the world war.

The Experimental Union connected with the O. S. A. A. A. is now able to announce an active policy regarding the production of pure seed and in the disposal of this seed it has a working agreement with the Provincial Field Crops Commissioner, Pure Seed Branch.

SCHOOL FAIRS, 1922

The work of the School Fairs in this district is becoming more popular each year, and requests for the organization of new centres are becoming more numerous.

This year, eleven new centres were formed and together with the fifteen held over from last year, all had very successful fairs. One centre, Wetaskiwin, withdrew its fair this year, but will line up again for next year.

During the winter of 1921-22 representatives from this school attended fifteen meetings to assist in the organization or reorganization of School Fairs. These visits even in the case of the older established centres, were found to be very useful, as often little misunderstandings and complaints could be adjusted to the satisfaction of all, and the work of the fair made to run along more smoothly.

The work was started early in January this year. Circulars and seed order forms were sent out and by the end of March, most of the seed orders were in. These seed orders were filled and sent out during the month of April.

A more definite plan for visiting schools was adopted this year. The visits were made to the schools of new centres, and to the less active schools in some of the older centres. All of the schools in Sundre, Innisfail, Millet, Sylvan Lake, Erskine, New Norway and Donalda centres and most of the schools in the Didsbury, Stettler and Asker centres were visited.

These visits were made by Geo. R. Holeton in charge of School Fair work in this district, and Miss McIntyre of the Olds staff, and were continued until the general close of schools in July.

In these visits a general talk was given to the entire school on the objects and benefits of the School Fair, suggestions for the preparation of exhibits of vegetables, grains, livestock, weed, plant and insect collections, with an explanation of the scheme for the Summer Short Course.

Following this the boys were taken to the ante-room or out of doors, and given some lessons in tying common useful knots, splicing rope and halter making, while Miss McIntyre talked to the girls on the preparation of exhibits of sewing and cooking. Models of the sewing were used to illustrate these talks.

From three to four schools were visited each day.

Judging from the increased interest and the added number of exhibits at these fairs, the work was of real value.

The names of about 200 eighth grade pupils who were interested in a course at the Schools of Agriculture were also secured during these visits.

The Stock Judging Competition, started at Olds last year, was continued this year, the silver cup, donated by C. W. Weir, going to the Olds eighth grade. E. Smith of the Olds School won the medal for the highest score in the judging competition at Olds. A similar competition was held at Stettler; the cup donated by H. Hearonemus, going to the Stewartwyn School. At Lacombe, the Shorthorn Club for boys and girls exhibited in connection with the school fair.

These competitions add a great deal of interest to the fairs, and it is hoped that more centres will add this feature to their fairs in the near future.



"BROADHOOKS LAD"

Shorthorn yearling from Demonstration Farm, Olds Agricultural School, Olds, Alberta, capturing Second at Toronto, Eighth at Chicago, and Second at Guelph, in 1922, in junior yearling class.

The Pig Clubs organized at Olds, Sundre, Innisfail and Carstairs had the effect of greatly increasing the number and quality of exhibits in these classes. The exhibit of pigs at Olds was worthy of special mention. Sixty-seven bacon type and 37 medium thick type pigs were shown, the quality of which would have done justice to the Calgary or Edmonton fairs. At all of the older fairs, greater interest and more and better exhibits were shown than at any of the previous fairs. The larger fairs deserving special mention for

quantity and quality of exhibits and for good management were those held at Carstairs, Lacombe, Red Deer and Olds, and among the smaller centres, Sylvan Lake, Sundre, Three Hills and Elnora.

A total of 4,660 pupils exhibited at these fairs, the total number of exhibits being 15,965. Following is a list of the centres at which fairs were held:

Airdrie, Asker, Carbon, Carstairs, Clive, Cochrane, Delburne, Donalda, Dog Pound, Didsbury, Elnora, Erskine, Innisfail, Keoma-Kathryn, Lacombe, Millet, Milnerton, New Norway, Olds, Ponoka, Red Deer, Rocky Mountain House, Stettler, Sundre, Sylvan Lake, Three Hills.

The following schools won diplomas: Airdrie R. 3, Asker, Carbon senior, Clive intermediate, Cochrane senior, Willow Park, Atkins, Jutland, Elnora consolidated primary, Whetsel, Innisfail senior, Gardiner, Mountain Grove, Millet, Calder, New Norway senior, Hainstock, Ponoka intermediate, Horn Hill, Stewartwyn, Sundre, Swan Lake, Three Hills Ridge.

BOYS AND GIRLS' SHORT COURSE AT OLDS

Perhaps the best way of stimulating interest and effort on the part of pupils in school fair work, and the best means of advertising the advantages of a course at the Schools of Agriculture to the boys and girls of the province, is through the boys and girls' short course.

It was tried out for the first time in this province, at Olds, July 10-15, 1922.

The objects of the course are:

First, to stimulate a greater interest among the children of the rural districts in the art of exhibiting at the school fairs; second, to provide a limited training in agriculture and domestic science for some of the more enterprising boys and girls of the province; and third, to bring more young people in our rural districts in direct touch with the work in the Schools of Agriculture.

The scheme in brief is this:

From the records of the 1921 School Fairs, the two boys and the two girls in each fair centre, having the highest score of points for exhibits at their respective fairs, were awarded the privilege of attending the short course at Olds, on condition that they were at least eleven years of age, and that no two came from the same family. In the event of there being two winners from the same family, the older member was given the preference.

No winner can attend the course more than once. Being a new venture and fearing that some parents might have misgivings about sending their boys and girls away from home, a personal visit was made to each home and the scheme was fully explained in detail. After this assurance that the children would be well looked after, they were with one exception quite willing and eager

for their children to attend. In cases where any were unable to come, alternates having the next highest scores were chosen.

All transportation expenses were paid by the government. Return tickets were sent to each boy or girl in ample time, and escorts were sent to accompany the children who had to make train changes in their journey. For the centres within easy car distance from Olds, children were brought in either by their people or by cars sent from Olds.

A definite schedule was followed each day, a sample of which is herewith given:

6.30 a.m.	Reveille.
7.00	Physical Training.
7.30	Breakfast.
8.15— 9.00	Games.
9.00—10.15	Classes in Field Husbandry and Cooking.
10.20—11.45	Classes in Dairying and Textiles.
12.00— 1.00 p.m.	Lunch.
1.00— 2.00	Games.
2.00— 3.15	Classes in Animal Husbandry and Foods.
3.20— 4.35	Classes in Carpentry and Sewing.
4.40— 6.00	Games.
6.00— 7.00	Supper.
7.00— 8.00	Games.
8.00— 9.30	Program of Entertainment.
9.45 p.m.	Retire.
10.00	Lights out.

Note: Other subjects were taken in class as well.

An endeavor will be made to extend the time of this course next year, so that it will not be necessary to make the course quite so strenuous.

It was really surprising to note the increased interest and enthusiasm shown by both children and their parents in the work of the School Fairs in the hopes of securing for a member of the family, a free trip to the short course at Olds.

The boys and girls were put to no expense and the total cost of the course to the government was \$500.00. We feel that in these boys and girls who have attended and so much enjoyed and benefitted from this course, we have a band of missionaries for the School Fairs and for the Schools of Agriculture who will assist in no small way the advancement of this work in the province.

PIG CLUBS

Four Pig Clubs were organized from the Olds School of Agriculture this year. Three clubs used Berkshire hogs and one selected Yorkshires. The latter is located at Innisfail, while the former are at Olds, Sundre and Carstairs.

In the organizing of these clubs each member was provided with three or more pigs, one a pure bred gilt eligible for registration and the others good grades of the same breed. For these he

gave his note, endorsed by his parent or guardian, drawn for six months. No difficulty was experienced in getting local bankers to accept these notes. In purchasing the pigs, the cost was kept down to such a point that two feeder pigs making satisfactory gains and selling at a price as high as seven cents per pound would pay the cost of themselves and one pure bred gilt. Thus after finishing and selling his pigs the member has been able to pay his indebtedness and have his sow left for next season.

Pigs were exhibited at the local School Fairs and very satisfactory exhibits made. At the Olds School Fair 104 pigs were exhibited, the majority of them by members of the Olds Pig Club.

No ear lot exhibits were attempted this season. The clubs were started at such a late date that it was deemed advisable to delay selling until pigs had attained more size. It was considered that it was of most importance to make the club financially successful.

GRASSHOPPER CONTROL, 1922

As was expected outbreaks of grasshoppers occurred in many parts of this district this year. Infestation, however, was not general but was confined to certain well defined areas. With few exceptions the outbreaks all occurred east of the C. & E. railway. The one notable exception to this was the Bergen area which is situated in Local Improvement District No. 282 and lies about 35 miles west of Olds. Quite a serious outbreak occurred here. In the Cochrane district, where they were quite bad last year, there were practically none this year. In the Kathryn and Keoma area in the southeast, no trouble was experienced whatever. The most serious damage was done in the Carstairs and Crossfield areas. Outbreaks of a serious nature occurred as far east as the extreme eastern boundary of the district.

In most parts the campaign was carried on with a great deal of vigor and very satisfactory results were obtained. This was particularly true where there was apparent damage. In a few places difficulty was experienced in getting the farmers to poison from the fact that no close examination was made and they concluded that no damage was being done. It is in these parts that the most serious outbreaks will occur in all probability in 1923. This holds in the northern section of the control district. Where the work was thoroughly done few eggs were laid last autumn.

Both the Salt Formula and the Molasses Formula were tried and given a fair trial. Apparently there was little difference in results obtained. Both gave satisfactory results when properly applied. A good deal of bait was wasted in some cases due to the fact that individuals failed to follow instructions. More education is needed in this respect.

While there will no doubt be outbreaks in this district in 1923, no great difficulty is anticipated. Farmers generally now have the information regarding this pest and its control.

VACCINE

The school still keeps on hand for sale Blackleg germ-free liquid vaccine. This vaccine is sold at a cost of fifteen cents per dose. The syringes for injecting same are also offered for sale at \$2.50 each. This vaccine has been sold by the school for the past three years and has given very satisfactory results.

THE SEASON OF 1922

The crop season of 1922 while not entirely a failure was very disappointing. The season opened up in April with fair promise. Seeding operations started on April 18th, but owing to a 3-inch snow fall on the 20th and an inch rainfall on the 21st, but little was accomplished in the way of seeding until towards the end of April. The weather continued to be fairly moist and cold up till the 5th of May. From that date until the end of May conditions for growth were quite favorable, there being considerable wind, but the temperature ranged high for the time of year and moisture was not lacking. The continuous strong winds in the last half of May, however, had the effect of drying out the soils somewhat quickly; this with the lack of rainfall of any extent right up until well into July created the most serious crop conditions experienced in the district during the past ten years. All early sown grain crops, except where on breaking or very good fallow, were light, the hay crops with the exception of Sweet Clover were a total failure. The later sown grain crops (sunflowers, potatoes, garden truck and greenfeed) benefitted by the July rains and produced very creditable yields.

The 1922 frost-free period was considerably longer than the average in the Olds district. The last killing frost of the spring occurred on May 21st and the first in the fall, on September 30th, when three degrees only were registered. The first killing frost came on October 10th. This gave a period of 130 days without frost of any extent and a span of 110 days without killing frosts.

Weather records have been taken daily at the Olds School of Agriculture for the past nine years. In this work the maximum and minimum temperature, precipitation, evaporation and sunshine are recorded. This information is sent monthly to the Dominion Meteorological Branch, Toronto, Ontario.

RANGE OF TEMPERATURES AT GIVEN DATES

In the work with recording temperatures at the station during 1922 one thermometer was kept in the meteorological box as instructed by the Meteorological Branch, Toronto; another was kept six inches above the ground nailed to a post and a third one was located in a low spot on the farm about a half mile distance from the first mentioned two. The minimum temperature of the grass thermometer ranged from one to three degrees lower than the one in the box while the reading on the one in the low place on the farm was on one occasion eight degrees lower than what was recorded on the thermometer in the meteorological box.

DATES OF FIRST SEEDING AT OLDS

1914 -1920

Years	Dates
1914.....	April 17th
1915.....	April 3rd
1916.....	
1917.....	May 5th (approximately)
1918.....	April 12th
1919.....	April 8th
1920.....	May 15th
1921.....	April 27th
1922.....	April 22nd

DEMONSTRATION FARM

The farm at the Olds School of Agriculture was laid out this season with two distinct crop rotations. The farm, being divided by a lane into two almost equal parts, made this arrangement possible and desirable. Heretofore the cropping scheme had been worked over the entire farm and this had been rather unsatisfactory both because of the size and shape of the fields, and from the different soil types these big fields contained.

Under the new system the north side of the farm, which is somewhat larger than the southern part, is divided into six fields of twenty-four acres each. Over this, a six year rotation consisting of (1) wheat seeded to a timothy and western rye grass and sweet clover mixture; (2) hay; (3) pasture; (4) fall rye; (5) oats, and (6) summerfallow will be worked. The south side is divided into four fields of slightly over twenty-eight acres each over which a rotation of (1) summerfallow or intertilled crop; (2) barley seeded with sweet clover; (3) hay, and (4) oats will be worked.

Arranging fields and preparing them for the next year rather upset the crop area for the year 1922. One hundred and fourteen acres were seeded with oats for a grain crop. Owing to the very dry season and the fact that the crop was seeded quite early, the stand was not good. Forty acres were so badly dried out that the field was fenced and pastured. After the rains came it proved fair pasture. Of the remainder, the summerfallow gave fifty bushels per acre. The average yield of the whole area being twenty-four bushels.

Twenty acres of barley were seeded in the four-year-rotation as a nurse crop for part of the field seeded with sweet clover. This was badly affected by drought and only yielded nine and one-half bushels per acre. The clover stand was also quite thin.

Thirty-one acres, parts of two fields, were seeded later with oats for green feed, and proved to be much the best crop on the farm. About five acres of a part of this that ripened was threshed and yielded fifty bushels per acre. The remainder gave eighty tons of green material for the silo and fifteen tons of cured green-feed.

Eight acres of sunflowers were seeded, and though they looked a fair crop yielded but forty-eight tons of ensilage.

Nine acres of sweet clover seeded the year previous yielded twenty-four tons, a part of it being cut three times.

Two small fields were seeded with barley to multiply seed grain, one with Barks and other with Trehbi.

The potato crop was fair, slightly less than one-half acre yielding seventy-nine bushels.

Twenty-four acres in the six year-rotation was seeded with fall rye in the first half of August, which went into the winter as a fair stand. The oat field of the six-year-rotation was fall plowed this year, as well as part of the oat field in the four-year-rotation. The 1923 fallow field of the six-year-rotation and part of the fallow of the four-year-rotation were also plowed. Part of the oat field for 1923 of the four-year-rotation was left unplowed because of the excellent fall pasture it afforded.

THE SILOS

The best work started with the pit silo a year ago is being continued this year. The silage from the pit is being fed at the present time and is of better quality than that which is being taken from the stave silo. The pit silo was filled with forty tons of green oats, part of which was not cut before being placed in it. In one corner of this silo four tons of sweet clover were also placed. All three types of silage in this silo are feeding out with good results.

The stave silo was filled with seventy tons of sunflowers in the bottom and forty tons of green oats on top. The sunflower silage has given very good results in past years at this station and while the stock do not eat it with the same relish as they do oat silage, they consume it readily enough and thrive well while feeding on it.

ANIMAL HUSBANDRY

The season's work with the livestock at the Olds farm has been quite successful. Mortality this season was very low and was confined to three or four lambs and little pigs along with one adult sheep and one calf.

The half section of land that was used heretofore for mares brought to the department's stallions afforded ample summer pasture. During the summer the herd from the Youngstown farm was shipped here and has been retained. The Jersey herd from the Gleichen farm was also pastured for the summer months; during the fall it was shipped along with all but twenty-one of the sheep to Ponoka.

Five wether lambs were kept for classroom work when the shipment to Ponoka was made. These have since been sold and the flock now consists of the flock ram, twelve ewes and four ewe lambs.

Only two Berkshire sows were wintered the previous year. These produced litters in the spring from which several gilts were sold for breeding purposes. The males were castrated to be retained for classroom work.

Three bulls were sold at the spring sale in Calgary. Two were yearlings and one a two-year-old. These brought good prices. A good bull was transferred from the Athabasca farm and a very well bred growthy young herd bull was purchased from the ranch of His Royal Highness the Prince of Wales.

A pure bred Shorthorn steer, pure white, raised and fed on the farm was exhibited this fall at the Canadian Royal Show at Toronto, where he won second place in open competition; at the International Fat Stock Show at Chicago, where he gained fifth place in the open class; and also at the Winter Fat Stock Show in Guelph, Ont., where he again took second place.

The herd at the end of the year consists of forty-four head of Shorthorns, all told, two Hereford steers and ten grade Shorthorn cows.

There are ten head of work horses and three colts on the farm. One team of these are pure bred Clydesdale mares, the others, with two exceptions, are grades of considerably above average quality.

THE INVESTIGATIONAL WORK

The Olds School of Agriculture is now conducting a large amount of experimental work. The major efforts along this line are with crop rotations, cultural methods, varieties and strains of forage crops, water requirements of crops, selection work with varieties and strains of many crops, extensive work with management projects as applied to all common farm crops and extensive tests of different kinds with potatoes.

The details of the results from these experiments are given in the 1922 report of the experimental work at the Schools of Agriculture and will not be dealt with in this report. It might be permissible, however, to write a few general observations on some of the results which may be of especial value to the residents of Central Alberta.

At the present time the information we have as a result of the extensive tests with legume hay crops which have been under way for the past four years, directs one to recommend for trial the sweet clover crop to the settlers in the drier portions of the province. This crop has shown up in a most satisfactory manner under the adverse dry conditions of the past two years. It has in the first place been quite easy to get a stand of the crop. This has been the case when it was sown with or without a nurse crop, on summerfallow or stubble ground with the drill, or on the surface and harrowed in, and in rows or broadcast. It has given two cuttings of hay each season and when cut before any flowers, it makes good hay. As a pasture it has given promise of success,

Cattle, horses and sheep have pastured on it with seeming relish and have shown no ill effects from bloating.

Under field conditions at this station to date, the per acre yields from sunflowers have not been any heavier than those from green oats. The expense of growing a crop of green oat feed is very much less than the cost of growing a crop of sunflowers and the same might be said about the relative expenses of harvesting the two crops. It is possible that in some of the drier districts, the sunflowers would show up to much better advantage compared with green oats than they do here.

The value of the fall rye crop on a mixed farm in Central Alberta can scarcely be over-estimated. The crop supplies an abundance of very excellent pasture in the fall and spring months at a time when other pasture crops are very poor. The policy of seeding with one bushel per acre about the middle of July and pasturing in the fall after the crop has stooled out and has a mat covering the ground is followed. Care, however, should be taken to avoid close pasturing as we have found that such treatment may cause severe weakening of the plants or in some instances, winter killing. In the spring, after moderate fall pasture, the crop gives an early start and an abundance of pasture up till the middle of June or later. If the crop is to be cut for hay or allowed to ripen grain, the stock should be taken off at that date so that the crop can head out and develop unmolested. After pasturing in the spring up till June 15th, we have cut two cuttings of very palatable and nutritious hay. The hay to be of good quality should be made by cutting the rye crop when it has headed out and before it blossoms. It should be cut and cured and in the same manner as green oats.

Owing to the very limited rainfall during the past three or four years, it has been possible to ripen almost any variety of wheat or oats at this station. The early ripening varieties which were giving good results in the district some three or four years ago are now being replaced with the heavier yielding later maturing sorts. The results of the variety work at the station in the period from 1914 to 1917 inclusive would lead us to suggest that some of the earlier better yielding varieties of wheat and oats be retained in some quantity on many farms in Central Alberta so that production of these crops will be possible when there is a recurrence of such years as the wet ones of some years ago.

Respectfully submitted,

F. S. GRISDALE,

Principal.

Report of the Claresholm School of Agriculture

H. A. CRAIG,
Deputy Minister of Agriculture.

SIR,—

I have the honor to submit the annual report of the Provincial School of Agriculture, Claresholm, Alberta, for the year 1922.

On October 31st, 1922, the Claresholm School of Agriculture commenced with the following staff:

J. C. Hooper, M.A., Principal, Provincial Biologist, Instructor in Science.
G. B. Walker, B.S.A., Farm Manager, Instructor in Animal Husbandry.
H. McArthur, B.S.A., Instructor in Field Husbandry.
W. Lawler, Toronto Technical Institute, Instructor of Mechanics.
G. A. Richardson, B.Sc. (Agr.) Instructor in English and Mathematics.
Dr. C. E. Buchanan, V.S., Instructor in Veterinary Science.
E. E. Eisenhauer, B.S.A., Instructor in Irrigation.
Miss Mary M. Hall, B.Sc., Instructor in Home Economics.
Miss Christine MacIntyre, Instructor in Home Economics.

The following special lecturers gave instruction at the school during the term:

Dr. P. R. Talbot, Provincial Veterinarian.
A. N. Macdonald, Instructor in Dairying.
L. Nergard, Instructor in Blacksmithing.

Enrolment in the school in the fall of 1922, was as follows:

First year girls	16
First year boys	23
Second year girls	5
Second year boys	30
	—
	74

DEPARTMENT OF ANIMAL HUSBANDRY, POULTRY, FARM MANAGEMENT AND FARM BOOK-KEEPING

The work of this department is under the direction of Mr. G. B. Walker. In all animal husbandry work an endeavor is made to emphasize the practical side of the subject and to make it as useful as possible. First-year lecture work deals with the practical feeding, care and management of the common classes of livestock. The laboratory periods are devoted to the judging of livestock with a view to fixing in the student's mind the desired type and conformation of animals for market and feeding purposes. With the second year the lecture work deals with the classification of the common breeds of farm animals and their characteristics. Lectures are also given dealing with the fundamentals of animal nutrition and breeding. In judging work, a study is made of breeding classes, and as far as possible, some breed characteristics.

In first-year farm management and book-keeping, a study is made of factors contributing to successful farming. The practical work takes up the use of commercial paper and methods of keeping farm books and costs accounts. Second-year work continues on from this, taking up factors influencing cost of production, efficiency in farm work. Also a discussion of notes, contracts and other forms, including mortgages, is given.

In poultry study, the lectures deal with poultry management in regard to housing, feeding, breeding, rearing, and fattening. Practical periods given in judging, identification, fattening and dressing of poultry. Second-year work takes up the classification of poultry and poultry products, poultry nutrition, feeding, common diseases, their prevention and treatment.

The usual crate fattening work was carried on by the senior students. The ration consisted of oats two parts, barley one part with hulls sifted out, and mixed with butter milk. Very satisfactory gains were made even though the work was carried on under very low temperatures.

An experiment is being conducted in steer fattening with a view to determining the comparative value of the available roughages grown in Southern Alberta, for this purpose. Twenty-five steers are being fed in yards outside. These are divided into lots of five each. The aim in grouping was to make the lots as uniform as possible, there being only a variation of 110 pounds between the heaviest and lightest lot. The steers are grade Shorthorn and Hereford with some Angus blood. They weighed in with an average weight of 1,104 pounds each.

All lots are being fed the same grain ration, consisting of two-thirds barley and one-third oats. The variation is in the roughage:

- Lot 1 gets oat straw and corn silage.
- Lot 2 gets cut oat straw and sunflower silage.
- Lot 3 gets sweet clover.
- Lot 4 gets green oat bundles.
- Lot 5 gets dry cut corn fodder.

The silage is being used from a trench silo 40 feet long and by 8 feet deep by 15 feet wide. It is filled half and half with corn and sunflowers respectively. The silage at present appears to be of a very fine quality. It would appear that where only one kind of material was put in a silo there would be less waste and a slightly more satisfactory product. In addition to filling half of the trench silo, sufficient corn was produced to fill a seventy-five ton stave silo, and give about forty tons of dry corn fodder. This field of about twenty-one acres of corn was a very encouraging sight, suggesting the future of this fodder for Southern Alberta.

Work is being carried on in the production of cross bred hogs using a Berkshire and Tamworth cross to determine the comparative value of these cross-breeds with the pure strain.

DEPARTMENT OF FIELD HUSBANDRY

The work of this department is under the direction of Mr. H. McArthur, along similar lines to those of former years. Field husbandry is given in this department and consists of lecture and practical laboratory periods during winter months. The aim is to give a practical course in soil cultivation, farm crops, methods of improvement, fertilizers, seed selection, rotation of crops, judging and grading of grains, with special emphasis laid on cultural methods and varieties suitable for this district.

The experimental work of the field husbandry department was started in 1914, the year following the opening of the school. From a small beginning of a few variety tests the work has grown to include many phases which will be dealt with separately. The work now includes variety tests, head selections, rotations, cultural work, inter-tilled vs. summerfallow, summerfallow treatment, green manuring, hoed crops, clover and grass varieties and mixture of these, rates of seeding common cereals, dates and depth of seeding sunflowers, also dates and depth with potatoes, and this year eleven one-acre plots of summerfallow substitutes were started.

Rotations:—The necessity for a suitable rotation for Southern Alberta has been very apparent. Consequently we have laid down at present some thirty-two rotations from which we are collecting data. Each rotation is designed to throw light on certain phases of the work. The largeness of the territory which we serve necessitates extensive work and presents many problems, the worst of which are: blowing, moisture conservation, weed control, replacing the diminished soil fiber combined with a practical rotation of crops which will be both profitable and sure. Our better rotations include the following practices, replacing bare fallow with an inter-tilled crop, such as corn or a summerfallow substitute. They contain also a grass or clover mixture for replacing the fibre, but also retain a high percentage of cash crops such as wheat, oats, etc.

Rates of Seeding:—Experiments with rates of seeding cereals were reduced as we find such a difference of opinion on this phase of the work. Dates of seeding cereals were not touched this year as seasonal conditions largely regulate this. However, with sunflowers and potatoes, tests on depths, dates and rates were carried on. We felt that the data on these were very limited for the Claresholm and surrounding districts.

Cultural Work:—Cultural work includes barnyard and green manure, a comparison of different inter-tilled crops such as turnips, corn, rape, mangels and sunflowers for preparing land for next year's wheat crop as compared with bare fallow, the testing out of fall plowing vs. spring plowing at different depths, using various implements of cultivation for preparing mulch, packing with not packing, stubbling vs. spring and fall plowing and many others.

Our summerfallow methods compare early and late plowing, shallow and deep, one plowing with two plowings, and tilled and left untilled. Moisture determinations were taken on the summerfallow treatment to ascertain the effectiveness of each method for storing and conserving moisture. The moisture determination work was not confined to summerfallow treatments, but covers much of the cultural work as well as certain rotations.

Methods of breaking sods were also conducted.

Fodder Crops and Ways of Seeding Grasses and Clovers:—Systematic experiments for determining the effects of wheat, oats and barley as nurse crops at different rates of seeding upon sweet clovers and grasses—also different rates and dates of seeding sweet clover with and without a nurse crop and with and without culture. Also experiments for determining the advantages and disadvantages of the raw method over that of seeding in six-inch drills or broadcasting were carried on. In the majority of cases the catches obtained were excellent, and valuable information should be obtained next year when the hay crops will be harvested.

Summerfallow Substitutes:—This year eleven acre-plots were laid out on a separate area for carrying on summerfallow treatment and substitutes under field conditions. The aim was to combat blowing, by various methods of cultivation, by use of cover crops in rows and drills, and plowing vs. not plowing. The amount of work required for each preparation has been tabulated and will give us the cost of production when the experiment is complete.

Gardening:—Gardening, small fruit plantations and tree planting are supervised by this department. This year we enclosed our garden by a wind break of Russian Poplars, increased our strawberry bed and started six varieties of raspberries and twelve varieties of currants. Also the vegetables used for the dormitory are grown, demonstrating the value of a garden. Varieties for class room work are grown to demonstrate the lectures in vegetable gardening to first year students.

Extension Work:—Extension work and a large correspondence are carried on with farmers in our territory and out of it. The inquiries received are confined chiefly to preparation of land for different crops and rates of seeding. Many letters are received asking for instruction in seeding and establishing sweet clover, alfalfa, other legumes, and grasses. These appear to be the most difficult problems for the average farmer. Lectures at institute meetings and at seed fairs are given.

COURSE IN IRRIGATION

The Claresholm School of Agriculture, being only a few miles north of the Lethbridge Northern Irrigation district and serving a large part of the said district, is able to be of great benefit to this district. The course, being an extremely practical one, enables the students to return to their farms better fitted to cope with the

new problems confronting them. To each student is given an opportunity to be a power and an example in such a district. The example he can set in the method of handling and irrigating his own farm will be of great benefit to the district.

AGRICULTURAL ENGINEERING

The agricultural engineering course embraces carpentry (bench work and building construction), blacksmithing, gas engines, farm machinery, babbiting, pipe fitting, soldering, mechanical and architectural drawing. The work covered in each course is both technical and practical, placing the students at the end of the second year's course, in a position to do practically all their own engineering work and repairing on the farm.

The aim is to make the course as practical as possible, the laboratory work and the lectures all being closely related to the every day problems on the farm.

The farm motors' course is being made more attractive, as this year the students receive instruction in the operation, care of, and repair of the different types of farm tractors and automobiles.

The school appreciates the kindness of the following companies, in supplying tractors and farm machinery for use in the classes: The International Harvester Co., The Massey Harris Co., The J. I. Case Co., and The John Deere Co.

DEPARTMENT OF PROVINCIAL BIOLOGIST

Bacteriology:—The course in bacteriology with the second-year boys and girls is made to apply as far as possible to agriculture and household science. The study of bacteria in relation to each of the following is taught: air, water, milk, butter, cheese, soils, preservation of foods, vinegar-making and micro-organism in bread-making.

Culture Work:—During April, May and June, cultures for the inoculation of legume seed were grown at the School of Agriculture, Claresholm, and supplied to farmers in Alberta, British Columbia and Saskatchewan. The following is a statement of those sent out during the year 1922:

Alfalfa	867
Sweet Clover	909
Field Peas	195
Alsike	5
Red Clover	183
Beans	59
Sweet Peas	17
Vetch	18
Total	2,253

Entomology:—

This subject is taught to the boys of the first year only. They study elementary entomology, dealing with the place that insects occupy in the animal kingdom, their near relations, parts of the

body, circulatory, respiratory and digestive systems and economic orders. A study is made of the life history and important economic forms such as: Grasshoppers, cutworms, sugar beet webworms, beetles, flies, moths, etc. The various methods of control and insecticides are fully discussed.

Extension Work in Entomology:—During the summer considerable time was spent fighting the outbreaks of grasshoppers, cutworms, wireworms and sugar beet webworms. Owing to the seriousness of the grasshopper situation in Alberta in the spring of 1922, the Department of Agriculture divided a large part of Alberta into control areas, each area being composed of about four or five municipalities and three or four unorganized districts. A man was placed in charge of each control area to look after the organization work and to see that the Pest Act was enforced. Mr. J. C. Hooper, the principal of the Claresholm school, helped with the organization work in each area, located in the territory which the Claresholm school represents. Mr. W. Lawler, the mechanics' instructor of the Claresholm School of Agriculture, was placed in charge of Control Area No. 5, which comprised the area from Macleod to High River. Very effective work in fighting the grasshoppers was accomplished and resulted in reducing the damage to the crops to five per cent.

Control Area No. 5 included the M.D.'s of Argyle, Clear Lake and Riley and L.I.D.'s Nos. 100, 130, 131, 160 and 161.

The appointment as inspector was made on April 18th, 1922, and the first organization meeting was held at Carnforth on the 19th. By holding meetings at different points, an efficient organization was secured in each municipal and local improvement district. In the M.D.'s the council took charge of the work. By the last week in May the meetings had all been held, mixing centres located, and the ingredients for the bait ordered. The hoppers commenced hatching out by the 1st of June, and as soon as a demand came for bait the centres commenced operations.

Practically the whole of the three M.D.'s and the eastern side of the L.I.D.'s were infested, some being worse than others. It was only by the untiring efforts of the farmers, individually and collectively that the Roadside grasshopper, the first to hatch out, was brought under control. The bait proved very effective as in many cases it killed 95% of the hoppers. The Lesser Migratory and Two Striped Hoppers, though not so numerous, did considerable damage as they hatched out over grain fields and stubble lands, and were thus much harder to control.

Many of the mixing centres were in operation day and night, and even then were unable to keep ahead of the demand for bait. Tons of bait were used and although the demand was very heavy at times, yet it was very seldom that a supply of ingredients was not available at each centre.

The poisoning campaign which started about the 1st of June, was carried on to the 1st of September, and was so successful that in this district the hopper plague is not expected to be nearly so great next year (1923).

This district has reason to thank the Wilson Lumber Co. for their promptness in shipping out cars of sawdust, the McLaren Lumber Co. of Macleod, for the free use of their buildings, and a 7½ H.P. motor, the Town of Macleod for free water, free power, and free installation of power line.

It is estimated that in this control area, the campaign had the following results:

1. That 60 to 65% of the crop would have been destroyed had control measures not been adopted.
2. That the actual loss was held down to 3% to 4% of crop.
3. That crop saved represented 57% of total acreage.
4. That the value of crop saved, or 60% of total produced, is \$2,264,748.00.
5. That estimated value of crop actually destroyed is \$114,381.00.
6. That only 25% of amount of bait used this year will be needed next.

The total cost of the campaign in this district was \$50,926.13, which amount includes the share paid by the government. Deducting this from \$2,264,748.00, we have a net saving of \$2,213,821.57. Thus it will be seen that the control campaign put on by the Department of Agriculture, and loyally supported by the farmers, has resulted in a saving to this area alone of the large sum of \$2,213,821.57. Let this be an incentive for a complete clean-up of the grasshoppers this coming summer.

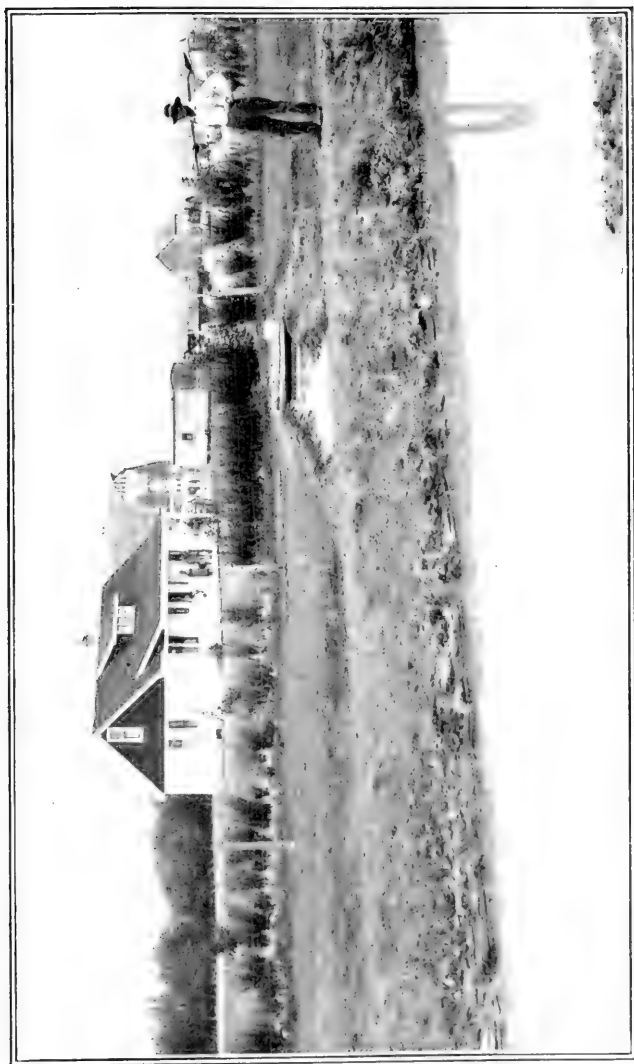
EXPERIMENTAL WORK

During the summer, experiments were carried on with insecticides for potato beetles, Western blister beetles, red-backed turnip beetles, cottonweed sawflies, aspen leaf rollers, cutworms and aphids.

Insect collections were made and the life histories of several insects were worked upon.

Botany—The subject is taught to the first and second-year boys. The more elementary phases are taught to the first-year boys, including seed germination and controlling influences, vegetative parts of a plant, parts of a flower and uses of each, weeds and weed-seeds and important economic orders of plants.

The second-year boys are taught the morphology of the various tissues, necessary elements, plant breeding, rusts, smuts, blights and the various fungicides.



HOME OF AN IRRIGATION FARMER IN SOUTHERN ALBERTA

EXPERIMENTAL WORK IN BOTANY

During the summer of 1922, collections of plants, weeds and weed seeds were made. Different methods of preserving plants were used. The alum bath—two ounces of white alum to one gallon of water—proved the best for preserving the natural colors of flowers, leaves and stems.

Horticulture—This subject is taught to the boys and girls, and is made to apply as far as possible to the farm home. The hardy trees and shrubs for wind-breaks are recommended. Instructions in the raising of hardy trees from seeds and cuttings are given. The beautifying of the farm home by the planting of wind-breaks, ornamental trees and shrubs, making of a lawn and the planting of annual and perennial flowers is fully discussed. Experimental plot work was carried on in the raising of hardy trees and shrubs from seed and from cuttings, and the raising of perennial flowers from seed.

VETERINARY SCIENCE

In the course of lectures in veterinary science, it is the aim of the instructor to help the students to grasp a broader and more accurate idea of the anatomical structure of the animal body, and the normal physiological function of the various organs, the proper care, and the application of such simple remedies as are beneficial to help maintain the animal body in the normal healthy condition, thus preventing developing of serious complaints, and their even more serious complications. Lectures on contagious diseases are also given periodically by Dr. P. R. Talbot, provincial veterinarian.

ENGLISH

The department of English, recognizing the importance of the subject to men of all vocations, and at the same time the difficulty of presenting it interestingly to the agricultural student, has endeavored to instruct in the principles of rhetoric, and the literary quality of the various selections in a practical and yet non-materialistic way. Additional reading in the nature of newspapers, magazines, periodicals, and historical production has been encouraged. Subjects for essays are chosen from the standpoint of enlightenment, as well as a medium for the cultivation of rhetorical skill. Journalism is introduced in an elementary way. The subject is being linked up with literary and social organizations, by the encouraging of debates, speeches and readings.

Mathematics — Experience has shown that a thorough grounding in the principles of mathematics is necessary to success in this subject. This department is endeavoring through the medium of extra classes for those who are not in possession of these essentials to assist these students by concentrating on types of questions designed to exemplify, and simplify these principles. The texts followed are the Dominion School Arithmetic (Part II.) and the

Dominion High School Arithmetic, but these are supplemented by problems in agricultural arithmetic, and those arising from actual farm practice.

Physics—The course outlined in the calendar is followed, rather systematically, the text in use being Merchant and Chant's High School Physics. The first year practical work consists of experiments designed not only to illustrate the principles and laws of physics and the various phenomena, but also to emphasize the need for accuracy, and carefulness in all experimental work. Second year practical work is incorporated in the lectures in the regular lecture periods. Mathematical problems, and the use of data, are given considerable prominence.

GIRLS

Course in household science for girls sixteen years and over, consists of two terms of five months each.

HOUSEHOLD SCIENCE

Instruction:—The aim of this course is to give the young women an efficient training in practical home-making. Not only is the practical side developed, but sufficient theory is given to lend interest and meaning to the work.

Cooking:—The work in cooking consists of actual practice work rendered intelligible by lectures concerning the theory of the subject. It comprises in the first year, planning, preparation and serving of meals—that is after having studied and cooked the necessary foods for breakfast, dinner and lunch or supper, they serve these meals in the school dining room. Also they are given experience in serving for special occasions as for special dinners, afternoon tea, etc. In the second year, special work is given in cooking, and each girl for three days gets the practical experience of planning, cooking and serving meals in the school, to members of the staff, who bear the expense of the food for these meals. They also get experience in cooking for special occasions as well. Lectures are also given on the marketing and storage of foods and a detailed study of food values both in health and disease.

Household Administration:—Closely related to this is the study of household administration, which covers subjects of vital importance to the homemaker; such as cleaning processes, house sanitation, home book-keeping, as well as general ideas on house planning and decoration. Here, too, the students gain knowledge by the most impressive methods, that of carrying out the operation under discussion. During the summer months instructions were given at some of the school fair centres, regarding cooking and sewing exhibits for the school fairs.

House Decoration:—Consideration of practical homes for Alberta forms the foundation for the work given in the course. House planning, furniture, draperies, floor and wall coverings, and accessories are discussed.

A note book is required of each student—the furnishing of a bungalow or farm home on a limited sum.

Sewing and Textiles:—Practical work is given in laboratory periods. A complete set of underwear embodying the fundamental principles, a blouse, a gingham dress and two embroidery pieces, are required of each student in the first year. The textile work includes a study of the fibres, silk, wool, linen and cotton. In the second year instruction in tailored work is given with practical application in a blouse and skirt. A made-over problem and a graduation dress complete the course.

Costume Design:—Costume design includes a study of proportion, line, color and texture, the ethics of dress, the planning of wardrobes, clothing budgets and the hygiene of clothing. A notebook illustrating various principles is required from each student.

Textile Chemistry:—A study of the present status of textiles, adulteration and substitution in materials on the market, bleaching, blueing, and dyeing of fabrics, and a study of textile laws are included in the course.

Laundry:—This follows work on textiles, giving practical laundering of all the fabrics in the most satisfactory way, removing of stains, methods of dry cleaning, soap-making, pressing and cleaning suits, small family washing, and equipping the home laundry.

During the summer months instructions were given at some of the school fair centres regarding the sewing and cooking exhibits for the school fairs.

Anatomy and Physiology: These two important subjects are discussed in lectures and illustrated by life-size anatomical charts. The systems of the human body and the organs composing each are dealt with from the point of view of position, function and hygiene. These subjects are closely co-related with and make clear many points under discussion in foods, dietetics and theoretical cooking.

Personal Hygiene:—The aim of this subject is to set forth plainly the best means of developing and maintaining physical vigor. The initial lectures are devoted to a concise discussion of the anatomy and physiology of the parts under consideration, upon which is based the subjoined advice.

Home Nursing:—This work, taught by lectures and demonstrations, enables the students to gain knowledge of this important study and to give them simple instruction in practical ways to

assist the doctor in all kinds of illness in the home when a trained nurse is not available. The demonstrations consist of bed-making, and changing linen in all cases; preparation of fracture bed; taking of temperature, pulse and respiration; method of making and applying poultices, fomentations, etc., bandaging, including the use of the roller and triangle bandages, slings, etc., practical treatment for common emergencies.

Lectures on the following: Preparation of sick room; care of patient, bathing and sponging, administration of cold and hot packs; giving medicines; charting; theory of treating emergencies, obstetrical nursing and care of the infant; infectious and contagious diseases and disinfection.

SCHOOL FAIR WORK

Those most vitally interested in the School Fair project have reason to feel that the year 1922 has been a most successful one in this district. Out of the fifteen fairs held, not one could in any way be considered a failure; some were top-notchers; others fell a little below the average; but the most pleasing feature is that average is ascending not descending.

The fact that Southern Alberta was unusually well supplied with threshing outfits—working at full capacity during the period of the fairs, interfered in some cases with the attendance, and it is most gratifying to be able to recognize that in those cases, the interest evidenced by the parents, teachers, children, and other promoters, was on no occasion reduced in any way. The directors had the whole-hearted support of the various committees, who in turn were, in most cases, given the required co-operation of the parents, teachers and children. This makes it very evident that each of the fifteen centers which have had one or two of these fairs, will be more or less self-governing, self-supporting and self-managing—so that the Claresholm School of Agriculture will feel justified in concentrating its energies toward the establishing of new centres, and devoting more time toward encouraging special phases of the exhibitions.

Two hundred and fifteen schools, or three thousand and forty children, applied for, and received the seed supplied free by the Department of Agriculture. Over three tons of Gold Coin potatoes were treated and shipped to the various centres. The exhibits in these classes made it apparent that this seed was in most every case put to the proper use and justified the expense. The Poultry Department, although the information with regard to its co-operation in the matter of supplying eggs was late in reaching the various schools, received more orders for eggs than could be filled, and on the whole, filled a long-felt want in the Claresholm district, that of encouraging the raising of a more profitable type of fowl, developed for utility purposes, rather than for strictly show-exhibition.

About thirty thousand entry tags were used, which is an approximation of the total number of entries in the various exhibits. Over six hundred dollars were paid in livestock prizes alone. The quality and preparation of the exhibits for show, was especially good, equalling and in many cases excelling in excellence those seen in our agricultural shows. This speaks well not only for future School Fairs, but for our larger exhibitions.

Several of the committees have been reorganized for 1923, and the essentials of their prize lists have been drafted. The slogan for 1923 is "At least ten entries per pupil." Fairs were held at the following centers: Macleod, Cowley, Granum, Claresholm, High River, Pincher Creek, Stavely, Okotoks, Foothills, Cayley, Champion, Vulcan, Blackie, Barons, Carmangay. There were 215 schools entered and a total of 23,300 exhibits.

The following is a list of the winning schools of the various centres: Granum, senior room; Stavely, room 3; Vulcan, Long Coulee.

BLACKLEG AGGRESSIN

The Claresholm School of Agriculture sold, during the year 1922, 325 doses of blackleg aggressin at 15 cents a dose.

YEAR BOOK

In the spring of 1922 the students of the Claresholm School of Agriculture published a year book. This year book illustrated the various kinds of class room work, and outlined the functions and accomplishments of the organizations of the student body during the school year.

STUDENTS' ORGANIZATIONS

All students' organizations were conducted as usual with considerable success during the term. The students' council is the chief executive of the students' organizations and directs student efforts and opinion, as well as acting as intermediary between students and principal in disputes. The literary and athletic societies did good work during the term in stimulating activities along these lines among the students.

Respectfully submitted,

J. C. HOOPER,
Principal.

Report of the Vermilion School of Agriculture

H. A. CRAIG,

Deputy Minister of Agriculture.

SIR,—

I have the honour to submit herewith the annual report of the Vermilion School of Agriculture for the year 1922.

The undersigned was appointed to the principalship in April, 1922, hence this report is somewhat curtailed since the term from January to March inclusive was not conducted under his jurisdiction.

CHANGES IN STAFF

Several changes in the personnel of the staff have occurred during the year. Mr. J. C. McBeath, former principal and instructor in agronomy, accepted another position with the department; Mr. N. C. Qua, instructor in science, was transferred to the School of Agriculture, Raymond; Mr. J. K. McKenzie, instructor in farm mechanics, resigned his position in May to accept employment with the Federal Department of Agriculture.

To fill the vacancies, the undersigned was transferred from the Raymond School of Agriculture to assume the duties of principal and instructor in science; Mr. B. J. Whitbread, formerly of the staff of the School of Agriculture, Youngstown, was also appointed to the Vermilion staff last spring as experimentalist and instructor in agronomy; in September, Mr. T. C. Talbot, also a former member of the Youngstown staff, was attached to the Vermilion School as instructor in farm mechanics. Following are the present members of the staff:

Permanent Members

S. H. Gandier, B.S.A., Principal and Instructor in Science.

E. H. Buckingham, B.S.A., Farm Manager and Instructor in Animal Husbandry.

W. S. Benn, Instructor in English and Mathematics.

B. J. Whitbread, B.S.A., Instructor in Agronomy and Experimentalist.

T. C. Talbot, Instructor in Farm Mechanics.

Miss Hattie M. Gowsell, Instructor in Home Economics.

Miss Ann P. Scott, Instructor in Home Economics.

Temporary Members

Dr. W. J. Moon, Instructor in Veterinary Science. (School term only).

J. H. Thompson, Instructor in Dairying. (Fall term only).

Miss Jean Crosbie, Instructor in Nursing. (Fall term only).

John Wotherspoon, Instructor in Practical Blacksmithing. (School term only).

Special lectures and instruction: Dr. P. R. Talbot, Provincial Veterinarian, visited the school both winter and fall terms and delivered special lectures in Veterinary Science.

DIPLOMAS

At the conclusion of the winter term, March 31st, diplomas were granted to the following students upon successful completion of the two-year-course:

Agriculture

Allan, C. A., Westlock	McCue, Arthur, Bon Accord
Bazley, Thos., Edgerton	Rice, M. Gladden, 9803 93rd St., Edmonton.
Cairns, John, Islay	Shemanchuk, Alex., 19343 96th St., Edmonton.
Elliott, R. R., Beauvallon	Symes, George, Battleview.
Winters, Hubert, Vermilion.	

Home Economics

Cairns, Mary M., Islay	McKay, Helen, Vermilion
Eyben, Marie, Cummings	Stibbards, Ethel L., Wabamun
Winters, Maud, Vermilion	

ATTENDANCE FALL TERM

The total registration for the fall term, commencing October 31st, was larger than that of 1921, but the increase was not so great as was expected. In many sections of the Vermilion district, crops were a partial failure on account of dry conditions during the growing season. This together with conditions of general depression in agriculture had a deterrent influence upon prospective students. The registration in the various classes follows:

Agriculture:—

First year	20
Second year	19

Home Economics:—

First year	7
Second year	4
Specials in blacksmithing and carpentry	5
Total	55

STUDENT ACTIVITIES

The social and literary interests of the student body are centered in the literary society. This organization with the aid of the staff, directs all social events and entertainments such as debates and concerts. The athletic association was also very active during the term.

GENERAL ATTITUDE OF STUDENTS

It has never before been my pleasure to work with so earnest and attentive a group of students. By their attitude toward the work, most of the boys and girls demonstrate that they have a definite purpose in attending the school, and that they are anxious to obtain as much as possible from the instruction given. Only a small percentage of students enter the University after complet-

ing our course, the big majority returning to their homes. For the latter this is absolutely their last chance for any sort of education. It is gratifying to see that they realize this fact. The earnestness of the student body in general in all branches of the work is no small assistance to the instructors in charge. The inattentive uninterested student is very much the exception. It was necessary in the fall term to dismiss one student for absolute indifference, in the interests of good discipline.

THE "NEW CANADIAN" PROBLEM

There is a wide area adjacent to this school which is settled almost entirely by immigrants from Russia and the Central European countries. Living as they do together in their own settlements, naturally they persist in many of their fatherland customs, both in their manner of living and in their farming methods. To make desirable Canadian citizens of these people will require time and patience. Our hope of success is in the boys and girls. The School of Agriculture is slowly but surely gaining a foothold amongst the young people in these so-called "foreign" communities. Mr. W. S. Benn, our English instructor, was delegated by the department in 1921, to work amongst these people to interest them in the courses offered at this school. The registration for the recent fall term would indicate that Mr. Benn's efforts bore fruit for we had eleven Russian boys and girls, all of whom were willing and eager workers, and several being exceptionally bright students.

SCHOOL AND FARM BUILDINGS

The school buildings were inspected by the Department of Public Works and were found to be in good shape, only minor repairs being necessary.

The need of a proper gas supply for our laboratories has been a great handicap in the practical classes in chemistry, physics and cooking. We are glad to report that an efficient gas outfit, similar to that in operation at the other Schools of Agriculture, was installed in October. It is giving excellent service and adds to the efficiency of the laboratory instruction.

The main class room has been equipped with sliding curtains so that the room may be properly darkened for lantern lectures.

The dairy laboratory is now available as an auxiliary class room. Fifty lecture chairs were added to our equipment for this purpose.

A large metal cistern has been placed in the laundry room as a source of soft water supply for practical work in laundering.

The old piggery which was found to be ill-suited for its purpose has been renovated and partitioned, part being made into a garage with capacity for four cars, and the remainder being fitted as a work room for the experimental department.

A new cement floor has been laid in the bull stable. The silo was straightened up and repaired. A new feed cooker was installed

in the dairy. The interior of the herdsman's house was painted and kalsomined. Poles were erected for a power line to the farm pump with the intention of pumping with electric power. The motor has not yet been installed.

METEOROLOGICAL REPORT

The spring of 1922 in the Vermilion district was fairly late and opened slowly; nevertheless the land was sufficiently dry for early dates of seeding wheat.

The month of May proved very favorable for general seeding, and grain crops obtained an excellent start throughout the district. This was followed by a dry period during June and July, and crops lost the advantage gained in May; in fact, in some areas, they were destroyed almost completely by drought. This reduced considerably the average of the crop throughout the district. An area with a southern boundary fifteen miles north of Vermilion and extending to the St. Paul district escaped these dry conditions and produced an average crop.

Much damage was done to oats, barley, corn and roots in the immediate vicinity by a frost of eleven degrees the night of June 8th. This, followed by unusually dry conditions the following two months, was responsible for many poor yields.

Harvest and threshing weather were very favorable. The dry conditions of the summer were not relieved by fall rains, and the soil was too dry for any considerable amount of fall plowing. Snow did not fall in any quantity until late in November. The total precipitation for the year was 14.26 inches.

EXPERIMENTAL PLOTS

The experimental work in farm crops during the past season, was conducted by Mr. B. J. Whitbread, instructor in agronomy. This work at all the Schools of Agriculture is consolidated under the direction of Principal F. S. Grisdale of Olds, in order that coherency of experimental work throughout the province might exist.

Some forty acres are set aside at this school for investigational purposes with all farm crops which may prove of value to the agriculture of this district. As early maturity of all grain and forage crops is one of the most important factors in crop production in the northern parts of the province, one of the prime objects of our experimental area is to determine those varieties which combine this character with other desirable qualities. Extensive variety tests are also conducted in roots and potatoes as well as in grains and forage crops. Particular attention is also given to the influence of rates and dates of seeding upon yields and date of maturity. In short, the main objects of the experimental plots are to determine the most desirable varieties, and the most suitable dates and rates of planting.

Tests with grain crops (varieties, rates and dates of seeding), have been carried on here for a number of years and some definite data gathered, but our work with forage crops has just begun. Our forage investigational work includes tests carried on under varieties, rates, dates and depth of seeding, with such crops as Yellow, White, Annual Sweet Clover, and Altaswede Red Clover; also variety work with Red, Alsike, Dutch and Mammoth Red Clovers; perennial forages, such as Brome, Western Rye Grass, Timothy, Meadow Fescue and Grimm, Baltic and Turkestan Alfalfa. Annual forage tests include sunflowers, corn, millets, Sudan grass and green feeds—mixtures of oats, peas, spring rye and vetches in varying amounts. Perhaps the most important part of this forage work is that in which forage crops are being worked into suitable rotations for mixed farming in this district.

Our rotation work is quite extensive, there being some thirty-three rotations varying from one to eight years in length of cycle. In these are combinations of crops for straight grain growing, mixed farming and dairying, and in all the object is to combine profitable crop growing with maintenance of fertility. The rotations are made more complete by experiments in cultural methods, which cover dates, depths and methods of plowing; summerfallow and stubble, farm manure and green manure, in rotations with root and forage crops; a comparison of yields of grain following summerfallow and inter-tilled crops.

While as yet soil drifting has not become a problem here with farmers, experiments are being carried on with resodding of land and various methods of breaking sod, with the double object of showing the renewal of fibre in land, and the best way and season for breaking land.

HORTICULTURE

This branch of the experimental work is also under the direction of Mr. B. J. Whitbread. The culture of small fruits is of chief importance on the horticultural area at Vermilion. Strawberries, raspberries, currants (red, white and black), gooseberries and Rocky Mountain Cherries are included in our experiments. These fruits, with the addition of rhubarb, compose a collection which can easily be grown by any farmer in the district.

The past season was an excellent one in which to demonstrate what bush fruits will do under most trying conditions. The first setback was a late frost in June, which reduced the yield of black currants some 75% and the red and white currants some 30%; while the other varieties of fruits practically escaped injury by reason of their later flowering period. The unusually dry period during July and August was detrimental to all small fruits and while it undoubtedly lowered all yields, still a sufficient quantity of fruit was raised for the purposes of our domestic science department.

Some loganberry bushes were added to the fruit area this year; this is decidedly a new fruit for this district.

We extended our bush fruit area the past year, and intend to enlarge it again next year, in an endeavour to bring this work more to the notice of visitors; it should prove an inducement for them to grow more small fruits in this section of the province.

The usual garden was planted with a common assortment of vegetables. A hot bed was used in forcing seedlings and good crops of tomatoes, cauliflowers, and cabbages were harvested.

Some tree planting was done but owing to the dry condition of many of the trees when received and dry weather following planting, together with lateness of planting and difficulty in keeping watered, only moderate success was attained this year. However, native trees and caragana transplanted this year did well despite the drought.

THE DEMONSTRATION FARM

The demonstration farm and the live stock are under the direct management of Mr. E. H. Buckingham, Instructor in Animal Husbandry.

As a breeding establishment the farm is performing a great service in the district tributary to Vermilion. Seven bulls and seven rams were sold as sires during the year. A number of small breeders find it convenient to use the farm sires for their purebred animals.

The herd of dairy Shorthorns made considerable progress during the year. An increase of 16 calves denotes the fecundity of the herd. Five of these calves, of which three are bulls, are out of imported cows and sired by Gay Wizard, herd bull of Wm. Haugh, Carlisle, England. Two cows in the herd produced over 8,000 lbs. of milk in one lactation period and five others will make the Record of Performance test.

A flock of eleven Oxford Down ewes raised fourteen lambs. Some of these were sold as sires in the district.

Three Berkshire sows raised twenty pigs. A herd of Yorkshires is also in the process of formation.

Poultry breeding is not followed extensively at this farm. White Wyandottes being the only breed kept. The surplus males were crate fattened by the students of the Agricultural School. The results demonstrate that crate fattening poultry for the market is highly profitable. A ration of oat chop and buttermilk was fed for 21 days.

Feed required per 100 lbs. gain:

175 lbs. oat chop;

1027 lbs. buttermilk.

The birds gained 2.01 lbs. each while on test. Milk fed poultry sold for 4c. more per pound than grain fed. A profit of 27c. was made on each bird.

Live stock from the farm is used for class room work at the school during the winter term.

Two purposes dominate the field crop policy on the farm; first to demonstrate practical farm methods, and second, to secure feed for the breeding stock. Owing to the severe frost in June and continued drought during summer, crop yields were poor. A field of fall rye which went into winter in excellent condition was partially winter killed. A field of sweet clover was seeded down with barley as a nurse crop and a fair catch was obtained. A short rotation is being worked out. Seeding down with a grass mixture for two years seems to put more fibre into the soil thus controlling soil-drifting.

EXTENSION SERVICE

School Fairs.—The organization of school fairs in this district was conducted under the supervision of Mr. W. S. Benn. The large number of fair centres and the wide territory covered, required that Mr. Benn give this work his undivided attention throughout the spring and summer.

The Vermilion school district comprises all the territory lying west and north of Edmonton, east along the C. N. R. and G. T. P. and south to the town of Leduc. On account of the vast extent of the district a number of the fairs are conducted by a school fair representative stationed at Edmonton.

During the year just closed twenty-six fairs were organized throughout the district, directly supervised by the representative of the Vermilion Agricultural School. Of these, eight were newly organized.

Fairs in Foreign Districts.—A special effort was made to organize fairs in the foreign districts, and by the personal effort of the fair organizer from the Vermilion school, six fairs were organized in these districts. It is the intention of the fair representative to organize three more fairs in these districts during the coming spring.

Organizing fairs among foreign settlers is attended by many difficulties, and success is not always to be expected with the first fairs, but these settlers in most districts are anxious to take advantage of the educational benefits to be derived from the fair, and within a very short time will be able to appreciate fully the different features of the fair, and to manage and conduct the fair along much broader lines.

Fair Statistics.—A total of 279 schools and 6,585 children took part in the fairs conducted in the territory immediately adjacent to the Vermilion school. Of the 6,585 children who participated in the fairs, approximately 50% are of foreign nationality. Two fairs were cancelled owing to outbreak of sickness in the districts. One fair was abandoned owing to faulty organization. St. Vincent, St. Paul and Bonneyville combined for financial and organization reasons. Approximately 30,000 entry tags were used for exhibition purposes.

Supervision. — During the months of May and June the fair representative visited the various fair boards, for the purpose of giving instruction in the matter of programmes, finances and new features.

It was as a part of this work that the representative visited as many schools as possible, giving short talks to the children on the fair and its different aspects, stressing particularly the agricultural features. In a number of cases school boards also were visited for the purpose of securing greater moral and financial support to the fair.

In the districts where fairs were being conducted for the first time, all the schools were visited, and helpful instructions given to teachers and children.

In all cases the inspectors, under the Department of Education gave valuable assistance, in the work of organizing, supervising and conducting the fairs.

The fairs of 1922 were very successful when the crop, and other conditions which have prevailed in this territory for the past four or five years are considered.

The fair held at Viking deserves special reference as it was the outstanding fair on the circuit. The special features were, the open air concert on the grounds; the boys' stock-judging competition; the oratorical contest and the manifest interest of the district in the fair.

It is the plan of the fair representative to continue these stock-judging contests in all districts, where capable men or graduates of the agricultural schools can be secured to coach the boys in stock-judging.

Early in the season the Poultry Branch of the Department announced its plan of supplying eggs to the children of the various schools for school fair purposes. The supply was eagerly taken up and in a few days the offer had to be withdrawn.

The exhibits at two fairs were judged by the judges from the Edmonton school fair circuit and one by Sedgewick school fair circuit. All other exhibits were judged by the staff of the Agricultural school without assistance from outside except for a short time during the forced absence of the fair representative.

Benefits Derived. — We believe the institution of the school fair, is the logical step, following the placing of agriculture on the programme of studies as a subject of formal study in our public schools by the educational men of the country. It makes the agricultural teaching complete. All effort of the children is suitably rewarded and it inspires the children to greater efforts in the acquiring of academic and agricultural knowledge, and to a greater appreciation of the importance of the farming industry.

It is a community institution, and one of the organized means of promoting community welfare, and as such, should receive the whole-hearted allegiance of every citizen of the community.

GENERAL EXTENSION

Pig Clubs:—A Pig Club was organized by Mr. Buckingham, Instructor in Animal Husbandry, in the immediate vicinity of Vermilion with a membership of forty. One purebred Yorkshire gilt and two feeder pigs were secured for each boy or girl. Each member of the Club gave his note to the bank; the note being redeemed when the feeder pigs were sold in the fall. Thus a foundation stock of bacon type pigs has been introduced into the district.

Crop Improvement Association:—This association was organized by Mr. Buckingham early in the year. Fourteen members obtained pure bred seed which was distributed by the University of Alberta.

Correspondence:—The general correspondence with farmers on all manner of farm problems during the past year has been fairly heavy. Each day inquiries reach us and pains are taken to reply with full information.

Personal Visits:—Many personal visits have been made by different members of the staff, especially to farms in the immediate vicinity of Vermilion, to consult with and advise farmers regarding their various problems.

Judging:—The services of the staff have been available for judging at Agricultural fairs. Judges were supplied to the following fairs in this district—Lloydminster, Innisfree, Mannville, Vegreville, Chauvin and Islay.

Home Economics:—Our Home Economics staff has been repeatedly in demand for addresses at Women's Institute meetings throughout the district. In May Miss Gowsell was temporarily transferred to the Women's Extension Service and was in the employment of that branch until October 1st. During the same period Miss Scott undertook the incidental summer work of our Home Economics Department and was available for judging at all of our school fairs.

Vaccine:—A quantity of Blackleg Aggrassin is constantly kept for sale to accommodate the farmers of the district. The demand for vaccine this year has been less than that of former years, which would indicate that this disease is on the decline.

Grasshoppers:—As the infected areas of the province were divided into definite districts with a man in charge of each district, the Vermilion School of Agriculture was relieved of that territory along the C. P. R. line from Camrose to the Saskatchewan border where grasshoppers caused some concern in 1921. Only one call for assistance reached the school during the past summer, an outbreak being reported in the vicinity of Mannville. This was investigated and only a few hoppers were found in a very restricted area. Treatment was not considered necessary. We have not since heard that grasshoppers appeared anywhere in our district in any considerable numbers.

Seed Testing:—Many samples of seed grain for germination test were received from farmers in the early months of the year. About December 1st instructions from the Department stated that seed testing at the schools of agriculture would be discontinued. Samples now arriving at this office are being forwarded to the Dominion Seed Laboratory at Calgary.

The foregoing is a general survey of the work conducted at the Vermilion School of Agriculture during the past year.

Respectfully submitted,

S. H. GANDIER,

Principal.

Report of the Raymond School of Agriculture.

H. A. CRAIG,
Deputy Minister of Agriculture.

SIR,—

I have the honour to submit the annual report of the Raymond School of Agriculture for the year 1922.

STAFF

The members of the staff of the Raymond School of Agriculture, are:

O. S. Longman, B.S.A., Principal and Instructor in Agronomy.
E. E. Eisenhauer, B.S. (C. & I. E.) Instructor in Irrigation.
J. J. Loughlin, Instructor in English.
V. R. Hillman, B.S.A.E., Instructor in Farm Mechanics.
N. C. Qua, M.A., Instructor in Science.
W. F. Wilson, B.S.A., Instructor in Animal Husbandry.
Miss W. A. Suttaby, Instructor in Household Economics.
Miss J. I. De Guerre, Instructor in Household Economics.
Miss M. McKean, Stenographer.

The following special lecturers gave instruction at the school during the term:

Dr. J. C. Haworth, V.S., Instruction in Veterinary Science.
A. N. McDonald, Instruction in Dairying.
J. Mehew, Instruction in Blacksmithing.
Miss M. Lavell, R.N., Instruction in Home Nursing.

CHANGES IN STAFF

A number of changes in the personnel of the staff has taken place since the last report was issued. Mr. E. E. Eisenhauer has taken charge of the farm in place of Mr. W. D. Hay, who was formerly in charge.

Mr. N. C. Qua, M.A., was transferred from Vermilion to this school as instructor in Science, and took the position formerly occupied by Mr. S. H. Gandier, B.S.A. Mr. Gandier went to Vermilion to become principal of that school.

Mr. W. F. Wilson, B.S.A., was appointed in October as instructor in Animal Husbandry. Mr. Wilson is a graduate of the Alberta University. Previous to accepting the position at this school he was engaged in agricultural representative work in the southern part of the province. In addition to the teaching work, Mr. Wilson has charge of the steer feeding experiments which are now under way at this school.

ENROLMENT

On March 31, 1922, the closing exercises were held. Prof. James Murray, and Mr. W. A. Buchanan of Lethbridge, delivered

very inspiring addresses to the graduation class. At the close of his address, Mr. Buchanan presented the diplomas and prizes. Mr. G. L. Stringam, M.L.A., for Cardston, and Mr. L. Peterson, M.L.A. of Taber constituency, were present and spoke very highly of the work being done by the school.

Diplomas were presented to the following students:

DIPLOMAS IN PRACTICAL AGRICULTURE

P. D. Bennett, Raymond	James McFall, Etzikom
Wm. Christenson, Raymond	Fred Stevens, Raymond
Leonard Johnson, Barnwell	J. O. A. Stevenson, Raymond
Andrew Lund, Raymond	Milton Strong, Raymond
	Vaughn Taylor, Raymond

DIPLOMAS IN HOUSEHOLD SCIENCE

Miss Fern Dahl, Raymond	Miss Beth Harker, Cardston
Miss Delma Peterson, Barnwell	

STUDENTS' ORGANIZATIONS

The student organizations, including the literary, social and athletic societies, were active during the term. In sports, the Raymond School of Agriculture basketball team succeeded in playing in the finals for the provincial championship, but was defeated by Victoria High School, Edmonton.

EXPERIMENTAL WORK

A separate report has been issued covering this work consequently this important phase of the school work will not be dealt with in this report, except to mention that the importance of the work cannot be over emphasized. The need of information and the importance of keeping instructors closely in touch with their work amply justifies carrying on this work.

Short Course:—A short course for farmers was put on at the school for a period of four days, from February 27 to March 2, inclusive.

This course was given at the request of many farmers throughout the district. Not only were many farmers of the surrounding district present, but a considerable number attended from towns along the same line of railway. It may not be out of place to explain that Raymond is admirably located for the holding of such a course. The train service permitted the farmers to come from Magrath and Cardston in the morning and allowed them to return in the evening.

During the four days there was an average daily attendance of seventy farmers. This course met with general approval and it was the wish of those present that such a course be made an annual event.

Extension Service:—The services of the staff were required frequently during the summer to judge at a number of Agriculture and School Fairs throughout the district. A large number of meetings were addressed during the winter, particularly in the interests of the irrigation farmer. During the summer months the Household Science teachers were engaged in Women's Institute and School Fair work.

SCHOOL FAIRS

During 1922, School Fairs were organized and conducted in accordance with the rules and regulations of the 1922 School Fair Bulletin, published by the Department of Agriculture.

Early in the year, seeds as well as instructional circulars and bulletins were distributed among the communities desirous of organizing Fair centres. Upon request a representative of the school went out and gave assistance in the organization work, and later on representatives visited each school included in every newly organized School Fair centre.

These representatives gave suggestions to the pupils regarding the management and care of their gardens as well as advising them respecting the correct methods of exhibiting in the various classes concerned. The co-operation of the School Inspector was secured at a number of centres.

The boys received potato seed while the girls received flower seed and in addition each pupil received the following kinds of seeds: Beets, carrots, parsnips, peas, turnips and mangels. The exhibits of produce grown from these seeds were at all centres good and showed that a keen interest had been taken in the garden work.

The other classes of exhibits were as follows: Grains, live-stock, cooking, canning, sewing, art and manual arts, penmanship, map drawing, and plant, weed and insect collection. Keen rivalry was displayed by the schools competing in the above-named classes. The school which had the best exhibit at the Fair was awarded a Diploma by the Department of Agriculture. Needless to say this proved to be a very encouraging factor and provided great stimulus in all competitions.

School Fairs were held at the following centres, New Dayton, Orion, Manyberries, Lucky Strike, Aden, Milk River, Del Bonita, Magrath, Cardston, Barnwell, Bow Island, Irvine, Foremost. There were over 7,200 exhibits at these Fairs.

GRASSHOPPER CAMPAIGN

The grasshopper menace was quite severe during the past season in many parts of the territory served by the Raymond School. The campaign as outlined by the Department of Agriculture, was organized and carried on in this district by Mr. V. R. Hillman of the Raymond School. The territory served by the school included Local Improvement Districts Nos. 7, 8, 9, 27, 38 and Municipality No. 10.

Beginning about the middle of April, meetings were held in all communities that could be reached and the farmers were urged and assisted in organizing the district for the campaign, and given instruction in the habits and control of the pest.

As far as possible, the local U.F.A. organizations were used as a medium for reaching the farmers of each community and through the assistance of the officers of this organization a very effective campaign was carried on. It was found that the chief difficulty encountered in attempting community organization early in the season, when it should be effected, was the fact that people were very slow to believe that the outbreak would prove serious.

Mixing machines were built and mixing stations established at six points through this territory, namely: at Stirling, Raymond, Magrath, Spring Coulee, Cardston and Woolford, with competent men employed at each station.

Approximately 525 tons of mixed bait was supplied, of which amount the three stations at Stirling, Raymond and Magrath, supplied about 75 per cent. The territory immediately surrounding these three points was much more infested than that farther west and south. Local Improvement Districts 7 and 8, which are largely grass lands, reported little or no damage to crops and comparatively few of the pests were noticed in these districts at any time during the season.

The effectiveness of the campaign has been quite satisfactory. It is extremely doubtful if one per cent. of actual crop loss can be attributed to grasshoppers. Whereas, had no poisoning been done, the loss would certainly have reached 20 per cent. and even much higher than that over certain areas that were badly infested. The losses experienced were for most part confined to narrow strips around the edges of fields where the pests had come in from road allowance, or on infested field lying close by, that had not received proper attention earlier. There were only two instances observed throughout the entire district where a field was hopelessly damaged. In both instances the crop had been stubbled in.

Although there is still sufficient reason for being prepared to carry on the campaign next season, yet the outlook, as a whole over the district, is very encouraging. The hoppers were comparatively few in numbers late in the season, and practically no breeding grounds have been observed.

DEMONSTRATION FARM

Owing to the very late spring it was impossible to begin work on the farm much before the first of May. No grain was seeded until the middle of the month, but by this time the soil had warmed up sufficiently to allow of very rapid growth. The season was very open, allowing of considerable field work during October. Water was running in the ditch until November 5th and we actually did some irrigating on November 4th.

In regard to the irrigation work, we float-levelled all fields that were to be seeded to grass and alfalfa, but, as mentioned above, the lateness of the spring prevented us from levelling all fields seeded to grain. However, when water was available and was not needed for the grass and alfalfa fields, we applied it to the fields that had not received any special attention in the way of levelling.

A field of thirty acres which was badly infested with Canadian thistle, was summerfallowed. The field was kept absolutely black during the whole summer and fall, the last cultivation being given on November 3rd. The duck foot cultivator as well as the rotary rod weeder was used to keep the thistles from growing.

Twenty acres were seeded to corn and sunflowers planted in check rows in order to allow of cultivating in two directions and so try to control the growth of Canadian thistle. A fair tonnage was obtained particularly from the sunflowers. The field of corn received one irrigation while the sunflowers were watered twice. After harvesting the whole field was plowed.

Ten acres were seeded to oats for green feed, but here the thistles had a very considerable start and in many places killed the oats. Only half of the field was irrigated. The part watered produced such a rank growth of oats that the thistles did not form seed and did not injure the palatability of the resulting crop of oats and thistles when cut for hay.

Another field of about twenty acres was seeded to barley and although sown very late they ripened. In this case, too, where the water was applied, the barley gave a good yield even among the thistles.

The year 1922 was very unsatisfactory for the starting of grass seed of almost any kind, whether sown with or without a nurse crop. The same was true of the raising of alfalfa, but in this case where heavy seeding was practised and care taken in irrigating, it was possible to obtain a fair stand. The ravages of the grasshoppers were very severe in the case of both the grasses and alfalfa. A field of 25 acres was seeded to a mixture of six pounds of Brome, six pounds of Western Rye and six pounds of Sweet Clover, to be used as a permanent pasture. The Sweet Clover germinated well, but the grasses came up so very thin that the whole field was plowed up.

Twenty-five acres were seeded to alfalfa. This field was alongside of our present pasture and here the grasshopper eggs were very abundant. The field was poisoned six times, but even then considerable damage was suffered by the young alfalfa. Half of the field was seeded at the rate of twenty pounds per acre, while the balance was seeded at the rate of ten pounds per acre. The heavy seeding withstood the ravages of the grasshoppers while the lighter seeding will have to be partly reseeded next spring.

A field of alfalfa seeded in 1921 gave a very heavy yield from two cuttings. No weeds were present in the second cutting, showing that alfalfa is a very satisfactory eradicator of weeds.

Thirty-five acres of the farm were seeded to oats as a nurse crop with Alsike, Clover and Timothy. The field was watered once on June 25th and produced a very heavy crop. The yield was over 103 bushels per acre. The grass and clover failed to make a satisfactory stand and the whole field was plowed.

A permanent pasture of about thirty acres of Brome grass was used for the stock. Twelve head of cattle pastured on it all season, and part of the time it handled eighteen sheep and thirteen horses. Ten acres were cut for hay and then watered immediately and gave a very excellent pasture in the late fall. The field was watered three times and some of it received four applications.

In 1921 a four acre field was seeded to Rosen rye and went into the winter in excellent condition. This summer (1922) the rye was cut for hay when five feet high. The field was then irrigated and gave a yield of twenty-one bushels of threshed grain per acre.

In summarizing the irrigation work, some 120 acres received a single irrigation and 42 acres were irrigated three times. A four-horse leveler was made and used to level all fields that were to be irrigated. Culverts were put in where any farm road crossed the ditch and a large culvert was put in where the water is delivered to the farm.

During the year a new horse barn was constructed and the shed that had previously housed the horses was hauled away and used for shelter for stock used in feeding experiments. A Fairbanks scale was installed to permit of weighing the crops produced on the farm as well as in connection with weighing livestock. Several fences were constructed along roads leading through the farm; around the barn, and between the farm and the school buildings. Three corrals were fenced at the cattle barn. To provide for feeding experiments four yards were constructed on the east side of the farm. They were placed here so as to be close to the reservoir. The reservoir is about a mile in circumference and about ten feet deep at the lowest end. The dam for the reservoir required considerable work to make it high enough to provide adequate storage. A fence is in course of construction around the reservoir. This was necessary as the reservoir is also used by a farmer who owns land adjoining the farm.

To take care of the sunflowers and corn used in the feeding experiments we dug a trench silo. This silo is 138 feet long, fourteen feet wide and eight feet deep. One half of the silo is filled with straight corn silage and the other half is of sunflowers. The silo at the barn is partly filled with a mixture of equal parts of oats and corn.

Respectfully submitted,

O. S. LONGMAN,

Principal.

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